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## MEDICINE—AUTHORITARIAN OR DEMOCRATIC?

THE National Health Service has been floated on a sea of medicine. The expenditure on drugs during the first nine months was over sixteen million pounds, which is equivalent to more than twenty-one million pounds a year. Considered together with our annual expenditure of thirty million pounds on patent medicines, these figures not only underline the extent of indifferent and ill health, but point to a popular readiness to swallow pills, potions, and exaggerated advertising claims, with equal lack of discrimination. And, as Dr. Leach points out (page 162), even where a doctor is consulted, there is a flattering but pitiful belief that he can cure by some semi-magical means.

It is, at the most, poetic licence to compare the popular approach to the doctor with that of some primitive tribesman to his tribal magician: the doctor makes magic passes with his wand of office (a stethoscope), writes out a magic incantation (a latin prescription), and orders a magic potion (a bottle of medicine), to be taken with due regard to magic ritual (tds. pc.). Too often, both doctor and patient then seem to feel that, without any further effort or co-operation on the part of the patient, all will shortly be well—even without the patient knowing what is wrong with him, and why; and what he must do for himself, and why.

It is true that the doctor himself would often be hard pressed to answer these questions. In such cases the traditional authoritarian relationship between doctor and patient may serve both well. In general, however, much more would be gained than lost if medicine followed the example of education and increasingly discarded the authoritarian for the democratic approach. This movement must of course develop in the medical and nursing schools and amongst practising doctors and nurses. But teachers could do much to encourage it by interesting children in the triumphs and failures of modern medicine, and by helping them to form a correct picture of the doctor's function and of the proper relationship between doctor and patient.

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# EDUCATION FOR CHARACTER

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Education has in the past been mostly concerned with the acquisition of knowledge, and our examination system has been almost entirely devoted to the test of our knowledge. The acquisition of knowledge is not to be underrated. Not only is it a cultural pleasure and a delight, but knowledge gives us the means to adapt ourselves to the world around us, to make the best use of its resources, to direct rightly the forces within man's own personality.

But the emphasis upon knowledge, and the consequent enormous advances in science to the neglect of character has meant that science has far outstripped character. The result of this has been that man has forged weapons of destruction which he is not capable of controlling, either by reason or by common sense, and this is leading to man's self-destruction by the very weapons he has created.

It is no use blaming science ; still more futile is it to try and check the advance of science and call a halt to it, as some suggest. The only cure is that we should give more heed to the development of character, that these mighty forces may be used more sensibly. Man has mastered the forces of nature ; it is himself he has failed to master. He must learn to control his passions before he can direct for the good of man the physical forces he has released.

The task of maintaining morals and developing character has been in the past almost exclusively the function of religion, and governments have been under a deep obligation to the churches for the maintenance of moral standards making for a law-abiding community, an obligation which they have not always recognised. But this has had one unfortunate result, namely that as orthodox religions have tended to be discredited, the moralities which in the main have been based upon them have gone the same way ; and appeals to honesty and truthfulness on religious grounds have tended to fall on deaf ears. The fear of Hell is no longer a deterrent to crime, nor obedience to God's laws an incentive to good behaviour. Moreover, the weakening of the authority of the Church in the State, and the gradual abolition of religious teaching in schools (however desirable these may have been on other grounds) have made the gap between material progress and moral standards of life still wider. Morality cannot be left entirely to religion, for those who are

not interested in theology or religion are yet concerned with the moral standards of honesty, truthfulness and consideration for others, without which a healthy and happy community cannot be built up.

But moral teaching has not exclusively been the function of religion ; educationalists have also concerned themselves with these problems. One of the characteristics of our Public schools has been their emphasis upon personality and character. Whether or not they have succeeded in individual cases may be a matter of opinion, but that at least was the principle on which they were founded, and the broad type of education they have given has been the envy of the world. But it has not been confined to them, for the same principles have now percolated to secondary schools and even to Borstal, since it is obviously in boarding schools, where the children are under wholetime supervision, that these principles can best be taught and carried out.

The aim of education, it is now recognised, should be not merely the acquisition of knowledge but the *development of the whole personality* by the release of the latent potentialities in man, and their direction in ways that will be to the social good of the community and to the building up of a strong and healthy character. In fact, the aim of education should be mental health, which means the full and harmonious functioning of the whole personality. The healthy-mindedness of the child should take priority over the acquisition of knowledge, and character should take priority over the passing of examinations.[1]

### The Development of Character

There are various stages in the development of character and mental health.

*Behaviour.* In the first place, society in the person of the parents tries to solve the problem by demanding *good behaviour* in the child, that is to say behaviour in accordance with the moral standards of the community. The child is taught to be polite, to be unselfish, to obey, not to fight, to share its sweets, to put away its toys. This is the first step in social conduct ; and it is of value, for the child who is taught to be tidy and put away his toys, irksome as it is at first, will later get into the habit of it and find that it is to his own comfort, as well as to the advantage of others. This corresponds with the saying that actions make habits, habits make character, and character makes a destiny.

*Dispositions.* But obviously something more than right behaviour is demanded. To give is not necessarily to be generous ; the child who is taught to behave politely is not necessarily considerate of others ; the

[1]These are the themes of a forthcoming book by the writer on *Psychology and Mental Health*. (Allen & Unwin).

individual who behaves kindly has not necessarily a kindly disposition, nor is the man who acts bravely necessarily brave. The child may share its sweets in the hope of getting something more in return ; he may be well-behaved out of fear. A man may act bravely in order to hide his cowardice, and ingratiation is often designed to disguise a latent aggressiveness, or a sense of guilt.

Outward conformity is therefore not enough ; what we need are those more permanent qualities of personality, which in themselves will naturally lead to right action, namely the formation of *right dispositions.* The aim of the parent and teacher should be not to make the child behave unselfishly, although that is of some value, but to cultivate in the child an unselfish disposition ; not to encourage bravado but to make him really brave. It is more important that a child should have right dispositions formed within him than right actions ; for he may be made to *behave* rightly but not have right dispositions ; whereas if he has the right dispositions these will normally and naturally express themselves in right behaviour. Our actions must be the outcome, the result, of these qualities in ourselves which we call our dispositions. We shall then be kindly because we have a kindly disposition, determined because we have a determined disposition, and polite because of a real consideration for others, which is the true essence of politeness.

The difference between behaviour and disposition may be illustrated in learning to speak correctly, of which we have heard a great deal lately. A small clinic boy of three years who was receiving sunlight treatment from a woman doctor to whom he was devoted (the writer's wife, in point of fact) was chatting away and used the phrase " I done it this morning." She said, " Oh ! You don't say 'I done it,' you say ' I did it '." The three-year-old pathetically replied " I can't speak nice like you. I *try,* but I can't do it." Now that boy had the right disposition, to try to " speak nice," although in fact he had not succeeded. On the other hand there are many children who are taught to speak correctly at school and do so in class, but immediately they get out of school they fall back into uncouth language. They have not developed a right disposition for speech ; they do not really want to " speak nice." This case of the boy also illustrates one of the main causes for the formation of healthy dispositions and character, to which we shall refer later, namely identification with someone they love and admire, which produces far more stable dispositions than teaching. Instincts are innate ; dispositions are acquired, formed by the reaction of the child's native propensities to its environment ; hence the paramount importance of environment in the development of the personality and of the mental health of the child. Once formed, *dispositions are the abiding conditions of behaviour,* and come to be the determining factors in our conduct. It is the person with a

sympathetic disposition who normally acts sympathetically, and the person with a cynical disposition who acts cynically. Morbid dispositions—those regarded by the individual as undesirable—are often repressed and form *complexes*. Complexes are morbid acquired dispositions, like a mother complex, which give rise to those abnormal forms of behaviour we call the neuroses ; thus aggressiveness may be threatened with terrifying consequences, be repressed, and later emerge as a fear of injuring or poisoning.

There are two main approaches to the formation of right dispositions : fear and affection—and undoubtedly the latter is the more effective. Fear should not be discarded as an incentive, for fear of consequences, of failure, of loss of reputation is one of the strongest incentives to right social action, and fear of punishment may make a child stop behaving jealously. But obviously the jealous child who is good only out of fear and the child who submits to irksome discipline from threats of punishment are apt to let out their real feelings as soon as the restraints are removed. Fear may make a child behave well ; love with its encouragement of identification makes him *want* to behave well, to speak nicely and to be kindly.

Identification is the most potent source of stable dispositions as it is of character, which we shall later discuss, since a child tends naturally to identify itself with those it loves and those it admires. Teaching moral principles and right conduct is good, but teaching does little good unless the child identifies itself with the teacher. St. Augustine tells us that he could never learn Greek, and never did till the end of his days, great scholar as he was, because of his dislike of his teacher. On the other hand, and in spite of his wild and licentious youth, his identification with his affectionate and religious mother won in the end, and he became a saint. Such identifications are decisive for the future character and happiness of the child. That is why the child requires the right parents ; and why our educational system must produce the right teachers who, by virtue of their personality as well as their knowledge, can command the respect and admiration of the children. Margaret Mead, the anthropologist, has shown the bad effects on American boys who, because of the prevalence of women teachers, have no male with whom they can identify themselves (their fathers being too busy making money!) and therefore select their heroes from the gangster films.

*Character*. But when we speak of right dispositions, we ask *right for what*? That brings us to the factor of ends and aims which constitutes the difference between dispositions and *character*. What then do we mean by character? Whilst dispositions are formed by the interaction of our native potentialities with *environmental experiences*, character is the quality of our personality as determined by our *ends, aims, purposes and ideals*. The

man of good character is the man with good aims and ideals, the man of bad character the man of bad ideals. What we mean by character is therefore something more basic in human personality than either actions, habits or dispositions ; it is something that inspires and directs the whole personality.

We do not need to create aims and ends in the child : they are already present. The question which youth is always asking when required to do any task is, ' Why ? ' ' What for ? ' ' What use will it be ? ' It is the end and purpose of things which is all-important for everything he does. In relation to moral conduct the questions ' Why should I ? ' ' Why shouldn't I ? ' are also relative to some end. In industry we call it an incentive.

### *The Function of Aims and Purposes*

The importance of ends and aims in the determination of character cannot be exaggerated.

1. In the first place it is these ends and aims which give *value* to our actions ; for when we speak of value we mean value *for* something, for some end. It is only in so far as things are of value to some end such as the happiness, success or efficiency of the individual or the welfare of the community that youth can be brought to pursue them. This should be borne in mind in ordinary school subjects ; boys and girls, required to learn Latin, constantly ask ' What for ? ' Surely some better answer (although the writer does not know what that is!) should be given than ' to pass examinations ', or even as a training of the mind—for youth would rather train his mind on some subject more likely to fulfil his aims or further his career. The original reason of course was that it did serve the purpose of the budding priest in enabling him to read the Vulgate and theological treatises in Latin. Youth is not concerned with abstract principles, but with practical issues and purposes. It is the end therefore which gives value to our life and significance even to our most trifling actions, so that the smallest act has significance if it is directed towards that aim, serving that purpose. A boy would find it boring to have to do some digging, but not if that digging was to lay a new cricket field or to pitch a tent. As he puts it, there is some sense in his digging for that. He will persevere in the hardest task if before him he has the thought of the desired end. He will field all day in the ' long field ' if he is keen on his side winning, and he will patiently fish all day in the hopes of catching one. It is the vision of that fish which keeps him going, and he will go home at night whistling even if he has caught nothing, buoyed up with the thought of those he might have caught. He has had a good day.

2. Secondly, having an aim *releases energy* in our body and mind. Announce to a school of listless, tired children that they are to get a whole holiday, and immediately they are all energy, sugar is poured into the blood, the muscles become tense, the mind becomes alert, purposeful and ready for action. The release of energy in their shouts of joy is almost enough to put up the temperature of the classroom! The strong man who gets things done is the man 'with a purpose'. Even a man who is physiologically feeble, as many reformers have been, may become the living inspiration of great movements because the pursuit of some aim has released within him superhuman powers. "Who is that inspired mouse?", said an onlooker, of such a man addressing a large conference. It is the pursuit of aims which gives to youth its inspiration, and the absence of it which gives to old age its disillusion. Look at the numbers of men who die soon after they retire! Those who are tired of life, therefore, should deliberately seek a new purpose to pursue to give them life; for life depends not only on what we take into ourselves but what we give out.

The effect of having an incentive was impressed upon the writer during the War when he was engaged in training psychiatrists in the Army. Doctors came, took the course and went forth. Then we started examinations at the end of the course, and the officers understood that the jobs they got to some extent depended on both their work in the wards and the examinations. Immediately with that definite end in view their work doubled in output and energy. In the same hospital the Commanding Officer started to give a 'star' to the neatest and tidiest ward. It seemed a puerile reward, but immediately the rivalry engendered by the aim put heart and soul into what was previously a boredom, and also inspired them with a new corporate spirit. So much for the inspiration and release of energy in having an end to pursue.

3. It is the release of energy and the voluntary pursuit of ends and ideals which give *strength to the will*. Whereas the *character* is the *quality* of a personality in the pursuit of its ends, the *will* is the function or *activity* of the personality as a whole.

The strength of the will comes in the first place from the basic impulses within us, but it is only when these are directed towards the purposes of the personality as a whole that it becomes the will—otherwise it remains merely undisciplined self-will. But for this purpose freedom and spontaneity is demanded, for an individual cannot direct his native potentialities to ends good or bad unless they are *free* to be so directed, and not suppressed as they so frequently were by the older methods of education.

4. The pursuit of an end *provides its own discipline*. We do not need to make occasions for discipline if boys and girls are allowed to pursue

their aims, for these aims will bring their own self-discipline, which is the only discipline really worth while. A boy or girl will endure the most arduous task if it is for some desired end. A spontaneous activity like a day's hiking with two or three others is not only enjoyable, but develops sterling qualities of character such as determination, resolution, resource, loyalty and endurance, and these qualities of character will be all the more valuable that they have been self-imposed. Life provides enough discipline for men and women who are pursuing right ends and fulfilling their right functions in life and doing their duty. The ascetic who spends his time fighting his own sins is a sick soul ; his energies might have been used to better purposes.

5. The pursuit of right and voluntarily chosen ends gives *freedom to the personality* and freedom to the will. When people talk of freedom they usually mean freedom of the impulses, freedom to do as we like. But giving free expression to the impulses usually means the enslavement of the will, which is the activity of the personality as a whole. Obviously what we desire is not freedom of the individual impulses but freedom of the whole personality, that the personality should be free to pursue *its* ends and aims unhampered by uncontrollable impulses. Freedom comes not from lack of discipline but from a rightly directed self-discipline. Thus discipline is necessary to freedom, as freedom is necessary to the full development of the personality.

6. The character as we have said is the quality of the personality as directed towards its ends and aims. The good or bad character depends, therefore, on the *nature* of those ends, for these determine the quality of the personality. One may have a strong will, but may yet be of a bad character, like many criminals and revolutionaries. The good character is one determined by the pursuit of ends both satisfying to the individual and of value to the community. One of the chief aims of education should be the establishment of *right* aims and purposes in youth. Given this, we do not need to worry about good conduct, right dispositions or even discipline. It is not that we need to teach boys and girls to have aims—but that they will need guidance both as regards the ends themselves and the means of obtaining them, and they need to be given the opportunities to pursue these ends. Such opportunities can be given both within and without the classroom.

In the development of character reasoning and sound judgment play an important part. Free discussion of various topics is one of the best ways of enabling a youth to think for himself, to express his views, to take and profit by criticism, to hear other people's points of view, and to alter his views if necessary in the light of reason. The purpose of such discussions should not be to impose ' right ' views on the boy or girl, but to get them to express, check and develop their own.

### *Sport in the Training of Character*

But play, games, and sport play an even more important part in the development of character. There is a difference between these three which should be appreciated. The word 'play' may be used of children's *spontaneous* activities and interests, whether running about, jumping, building huts, or pursuing their hobbies. It gives outlet to native impulses which would not otherwise find expression. 'Games' are *ordered*; there are rules to be kept as in cricket, chess or basket ball. Games are therefore of more importance in the development of social discipline and obedience to rules, for the encouragement of the team spirit, a recognition of the rights of others, and therefore they are a preparation for citizenship. Their value is the greater in that these disciplines are in activities which the individual enjoys: it is a willing self-discipline. 'Sport' is something more, for it not only keeps to the rules of the game, but to the *spirit of the game*. A team can keep to the rules and yet spoil a game—for instance by not playing their best when they see they are losing, and sulking when they have lost. Road hogs who constantly 'cut in' may be within the law, but they are hogs all the same, selfish at the expense of others, and lacking in sportsmanship. Scientists who share their discoveries on the other hand are true sportsmen. The objection to professionalism in sport is that since the players have to play for their livelihood, they are apt to play for that alone and consequently fail to show a 'sporting spirit'. It has been known in football that a man will trip another if he thinks the referee is not looking. It must be added, however, that there are many professionals who also show the highest spirit of sportsmanship: Don Bradman's knighthood was, I take it, not only on account of his being a good cricketer, but still more because he was a good sportsman, as he was. These principles of fair play, of the sporting spirit which takes knocks without complaining, of play for the sake of the game and not for gain, of loyalty to your friends, generosity to a rival, and of chivalry to a beaten foe, are of the highest importance as a preparation for life once they are established. Not only the battle of Waterloo but many other battles in life are won on the playing fields of every school in the country. There is no doubt that the Battle of Britain, which saved not only Britain but freedom for the whole world, was won by the display of the sporting spirit of our men, who refused to give in just because the odds against them were overwhelming, and when by the rules of the game they were already beaten before the battle started. The Germans on the other hand, who lacked this sporting spirit in their games in favour of the military spirit which thought of nothing but victory, could not take a beating and sulked in defeat.

Finally, we should like to put in a plea for more of the *natural* sports, by which we mean those sports like camping, mountain climbing, swim-

ming and sailing, in which we compete not against our fellows but against the forces of nature. In them we meet with the realities of life. Sailing, for instance, is not merely useful for training the hand and learning practical arts like splicing, and for the basic principles of mechanics, dynamics, geometry, and weather lore, but more than anything else it teaches manliness and resource, for if there is a squall there is no one to blow the wind offside—we just have to stick it and cope with it. These natural sports therefore provide the best preparation for life, and we should like to see every school which has a river, pond or sea within reach have Sea Cadets, as well as Scouts and O.C.T.U. (The membership of the cadets could, on account of the popularity which the scheme would encounter, be limited in number to one to every ten in O.C.T.U.) The sterling quality of the British nation in the past, as of the Bretons and the Norwegians, is largely due to their being sea-faring nations, accustomed to battle with the forces of nature.

The aim of education should therefore be mental health, which means the full expression and co-ordination of all the functions of the personality, just as physical health depends on the full functioning of all the organs of the body. But as the body is healthy only when all these functions are co-ordinated, so the personality can only be mentally healthy when the whole of the personality is functioning and when all its functions are not only working fully but in co-ordination and harmony by being directed to right ends, the nature and quality of which, freely pursued, make for the strong and good character.

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## SUMMER SCHOOL 1949

The Summer School held by the Central Council for Health Education under the direction of Dr. Robert Sutherland was particularly interesting this year, as the tutorial group discussion method was used to study the Nature and Needs of Man and the Principles and Practice of Health Education. It was unanimously agreed that such discussion, under the skilful guidance of the tutors—each a distinguished authority in his own field of public health, psychosocial medicine, child health, psychology, education or social work—roused and sustained interest, increased valuably the knowledge of the basic facts underlying the problems of health and education today, and stimulated creative thinking on how to meet these problems, more effectively than any other method.

The knowledge gained through study of the maturing individual and the content of health education was applied in the study of the practice of health education in medicine and education—the method of application having been sought in the study of the principles of learning and teaching and the theory and method of group discussion.

The whole experience was thoroughly enjoyed by all taking part.

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# THE TEACHING OF ANATOMY IN HEALTH EDUCATION

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Health doubtless must be defined in living, functional, physiological, psychological terms, but for clear thinking on health matters, structural normality and departures therefrom must always be kept in mind. Although not used as much as it should be, the anatomy department is the ideal place for teaching anatomy to medical auxiliaries such as nurses, masseurs and radiographers or to gymnasts, artists, lawyers and schoolteachers, all of whom must acquire some knowledge of human structure during their training. The following opinions and suggestions are gathered from experience gained in a department which has taught anatomy to a wide variety of pupils.

### *Three Dimensions*

Whatever their future professions will be, students must learn to think in three dimensions. Although this way of thinking should be a natural perquisite of the mind, built up as it is on a wonderful mechanism of stereoscopic vision for solid perception, the human even prefers to let his fancy wander in verbal ideas—these may really be visual but they are visions of the words in his text-books—and he also slips from three into two dimensions because thought is easier thus. Our school-days, especially in our teens, were devoted to words and figures with only brief excursions into three dimensional space in subjects such as the physics of mass and volume, the geometry of solids and the chemistry of the carbon atom. Let us hope, as teachers of those in their late teens, that recent trends in secondary school education, for instance the introduction of biology, will have helped our pupils in visualising the chambers of the heart, the air spaces within the lung, the relations of the shoulder joint and the intricacies of the ear. How can school-biology help us ? By the pupils actually dissecting worms, fishes, frogs and rabbits. How is it likely to perpetuate the evils of the past ? By the pupils only hearing and reading about animal environment and habits, heredity and other matters they have no opportunity to observe or handle.

### *Have You Seen It?*

It is a self-challenge for the anatomist to persuade his students to talk in examinations only of those things they have seen themselves with the naked eye, hand-lens or microscope, because then he must set himself to provide the necessary material in current or permanent preparations. The students benefit if they obey the injunction because they tend to read the text-books with a specimen, gross or microscopic, instead of retiring to quiet corners where they cannot verify what they read. Their critical faculties are brightened, largely on the lines of what is or is not important, and it has been the writer's experience that the few important anatomical points which cannot be seen in an ordinary curriculum for medical students are the better understood, as if the students now relied more on visual thought and memory. The method is feasible with medical students working in a well-equipped department, but impossible in training establishments removed from medical schools. One example is the hospital where the sister-tutor depends on the pathologist for her opportunity to demonstrate to her pupil-nurses the simple anatomy already garnered into their note-books. Many factors in a busy hospital interfere with the sister-tutor's and pathologist's best intentions, and though the body cavities and their contents can be well taught in the post-mortem room, the head, neck, pelvis and limbs often cannot be adequately used. Judged on their examination papers, nurses tutored with no anatomical material save possibly a badly mounted, incomplete skeleton do not easily acquire an adequate knowledge of the human body. Given the opportunity later of working with patients—three dimensional objects—they eventually become skilful at bandaging, splinting, assisting with operations and at other tasks which show how originally they could have used their time to better purpose on anatomical specimens than on diagrams and lecture notes. All the more regrettable is inadequate use of an anatomy department within the same areas as training establishments where anatomy forms some part of the course.

### *How to Entertain and Instruct Visitors*

Nothing but good can accrue to anatomical teaching from a change of students—from the medicals who listen because they must, to the occasional visitors who listen only if they are interested ; but in most instances the visitors' usual teacher can give the demonstrations if the department builds up a stock of suitable dissections. Those most generally useful are thorax and abdomen opened to show the disposition of the viscera, and an extremity to show muscles, nerves and blood-vessels. An important point is that the specimens be presentable, because the occasional visitor to the dissecting room can never acquire the equanimity of the medical student and because during and after the teacher's demon-

stration the class should handle the specimens themselves. Nor is there any good in 'leaving them to it'. Have you ever had the feeling of helplessness in revising your anatomy after years away from the subject, with no book or tutor but only the dissected specimen in front of you—as if you can progress so far but no further? Observation of a class of young gymnasts, for example, left to themselves with limb dissections, has taught the writer that even though the class were interested in the actions of muscles, they required a lead such as a list of muscles or of muscle-actions.

### *Too Few of the Seven Ages*

All teachers of those who in turn will teach the young should keep in mind how important is a knowledge of the young themselves. Anatomy departments in this country seldom receive subjects in the prime of life, let alone in adolescence or childhood. Although the adult's anatomy will serve to explain that of the child, several major features do not correspond, for instance the skeleton, the position of viscera and proportions generally. It is good to teach from an immature specimen even if only to impress the pupils with the delicacy of much of the child's anatomy—to give them that respect which the surgeon feels when operating amongst the filmy omenta and thin-walled intestines of a baby's abdomen. There is also even in the first months of life a completeness, a perfection of parts, of which the uninitiated is innocent, so that while demonstrating some structure in a baby we are often told "I did not think it would have been formed yet". This adds weight, as far as the early completeness of the young brain is concerned, to the educationalists' opinions on the importance of infantile experiences and the early establishment of standards of character and intelligence, and it might be suggested that every young teacher should at least have seen a human brain, peeped down a microscope at some nerve cells and fibres, and learnt that myelination of existing pathways, as well as conditioning, causes the child's growing responsiveness to tuition.

Unable to teach from routine dissections all stages of human anatomy, the writer has tried to fill in the gaps by other means. Students can be encouraged with benefit to study their own anatomy to a greater extent than most of them are naturally inclined; the thin students can act as models for the others and even the plump can be used afterwards in games of 'hunt the coracoid' or 'find the line of the knee-joint'. Also for several years the writer has supervised medical students in dissecting the new-born after their complete dissection of the adult. All sizes and conditions of foetus are included in the class material, the students being encouraged to view one another's dissections so that they

may see the stages of intra-uterine development and the commoner abnormalities. Unless they wish to study some special detail they are not expected to dissect into every corner of their little subject but to use it to revise regions or systems, the muscular and peripheral nervous systems being especially easy to demonstrate. Non-medical students always show great interest in these foetal dissections, which, though losing impressiveness by reason of their small size, regain it if they are presented for some feature comprehended in one field of vision—for example a dissection to show all the endocrines or the whole urinary system.

### *School Age Anatomy*

What of education of school children in human structure and function? Just as it is developing, the child's curiosity about himself and his fellows is quickly canalised or overwhelmed when he goes to school. Generation after generation has left school with scarcely an inkling from their teachers as to how their own bodies are made or work. The writer often thinks back on the one instance during his whole elementary and secondary education when his class was given any such instruction. This was a short address by a visitor with the official purpose of acquainting the boys about to leave school with an elementary knowledge of their own reproductive anatomy. The inadequacy of the address appealed to their adolescent sense of humour at the time but it also left the writer with a permanent impression of how not to deal with the bugbear of 'sex education'. Apart from the important home approach, it should be possible to give every child such education mingled with other elementary instruction about the structures involved in digestion, excretion, skin function, bone growth, muscle action, joint movement, posture, seeing and hearing. Only thus can balance be maintained. Remote from a university, this tuition would have to be given wholly from well illustrated texts, blackboard drawings and wall diagrams. Where the classes can be taken to an anatomy department, the museum, suitably designed and arranged, can be visited in the same way as schools visit other museums and art galleries. An anatomical museum is all the better if it possesses some animal specimens such as skeletons of the more familiar mammals because a little comparative anatomy provides interest, links up with the school teaching in biology, and preserves the perspective of Man's place in Nature. Children can be introduced to the dissecting room with much less mental upset than adults. This matter-of-fact attitude is consistent with the accepted nursery lore, so rich in cruelty and killing. Possibly the period between say seven and twelve years in some children would be too impressionable for a first introduction, but pupils in their early teens are old enough to be taught in the dissecting room if its general amenities are good. Much however depends on the presentation of the

specimens by the teacher. Reverting to sex education, the writer has noted the respect, even awe, with which a usually light hearted class of young people can listen to a demonstration of the pelvic viscera if the structures are handled and described by the teacher with now and again a suggestion of that sincerity and solemnity all should feel in dealing with the dead body ; such an approach gives the teacher an idea that the whole subject is more likely to be considered in future by these individuals in a respectful manner. In any case some such respect must be cultivated in the medical student as a preliminary to his subsequent training when he will deal with the living.

### *Post-Graduate and Post-Diploma Revision of Anatomy*

After entering their professional careers, the people who once had a basic training in anatomy and physiology seldom seek to revise these subjects in post-graduate or post-diploma courses unless for a higher degree. Nor can they be blamed, for revision of clinical facts is of more immediate value. Nevertheless teaching such courses would be useful for the anatomist who has to keep up his clinical contacts if he is not to be left severely alone amongst his preclinical students. Also, he hears so often from his clinical colleagues that in a few months his former students have forgotten most of their anatomy, a natural happening which he might explain better to the clinicians if he gently probed from post-graduates how much of their clinical teaching they had forgotten ! However unless vacation courses are to be prolonged, the anatomist need not hope for much post-graduate teaching, but can make the plea that the reader does not forget the anatomy department when he has a practical problem in medicine, physio-therapy, gymnastics, athletics, industrial efficiency or other matters involving human structure.

## HEALTH EDUCATION AND W.H.O.

At its first session held in Geneva 24–29th January 1949, the World Health Organisation Expert Committee on Maternal and Child Health resolved:—

The Expert Committee on Maternal and Child Health,

Recognising the supreme importance of educating parents in the care of the child and the public in general in all matters pertaining to health,

RECOMMENDS

(1) that a health education service be developed in W.H.O. to plan comprehensive programmes in this field through all modern media and to provide expert consultation to governments, with special emphasis on maternal and child health, including advice on training and employment of officers skilled in the techniques of popular health education ;

(2) that the World Health Assembly recommend to governments that they develop such health education programmes in connection with their health services.

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# MILESTONES IN MEDICINE
## 8. HOW PESTILENCE CHANGED THE MIDDLE AGES

By E. Ashworth Underwood, M.A., B.Sc., M.D., D.P.H., F.L.S., *Director, The Wellcome Historical Medical Museum; Hon. Lecturer University of London.*

In my last article I wrote of the *Chirurgia magna* of Guy de Chauliac. A surgeon of today would certainly consider this a rather unusual textbook from one aspect. In it the writer gives a description of his own illness. He says: "I fell ill with a continuous fever and a swelling in the groin and was ill for six weeks. I was in such danger that my companions believed that I would die, but the abscess became ripe and was treated as I have said and I escaped by the grace of God." Guy was a lucky man. The year was 1348, and the illness was bubonic plague—the Black Death.

This frightful scourge had been present in India and generally in Asia for some years. Then, in 1346 and 1347 Egypt and some parts of southern Europe were affected. By 1348 the whole of Europe was in its toils. The disease gave rise to swelling in the groins and armpits; these swelling were the 'buboes' of bubonic plague. But many of the cases were 'pneumonia', and death took place very quickly. Many patients showed black spots on their skin—the so-called 'plague tokens'.

It is difficult for us to conceive the high mortality of this scourge and the devastation which it produced. Conservative estimates agree that a third of the whole population of Europe died, and some authorities say that the proportion was as high as a half. In fatal cases death took place usually within five days. Houses and whole communities were decimated. Modesty was lost since men often had to attend to women and vice-versa. The infectious nature of the disease was well recognised—though the true manner by which it was spread was not known. Hence healthy people often shunned not only the sick, but also the clothes which they had worn and any articles they had touched. In certain countries physicians were dressed in long robes, with gloves which came well up the arms. They wore masks, and held before their noses sponges soaked in vinegar and spices. The mortality was so high that there was great difficulty in burying the dead.

The people as a whole were inclined to treat the threat of plague in two different ways. It was held that the disease was an expression of

"The Plague", by Arnold Böcklein, in the Basle Museum.

the wrath of heaven ; and one school sought to ward it off by prayer and solicitation. There sprang up the curious class of people called 'the flagellants'. These people formed themselves into bands, and marched from town to town, scourging each other's bare backs with whips. The other school adopted the convenient motto: "Let us eat, drink and be merry, for tomorrow we die."

In 1348 the fair city of Florence lost over a hundred thousand of its inhabitants. London and Venice lost as many, and Paris and Avignon —where Guy de Chauliac lay suffering—each lost over fifty thousand.

In Florence about that time was that master of Italian prose Giovanni Boccaccio. His great work *The Decameron* tells how some young noblemen and their ladies tried to escape from the plague by retiring to a villa near Florence. There they passed the time by recounting a number of tales. In his introduction Boccaccio gives—in less than ten pages—a most brilliant account of the Black Death at Florence. Who can fail to be horror-struck by his description, or the pathos in this famous passage: "How many brave men, how many fair ladies, how many gallant youths, whom any physician, were he Galen, Hippocrates, or Aesculapius himself, would have pronounced in the soundest of health, broke fast with their kinsfolk, comrades and friends in the morning, and when evening came, supped with their forefathers in the other world!"

Such were the immediate results of this dire malady. But it had late results too—and even now these have not been fully assessed. It is certain that it was a very powerful factor in breaking down the feudal system, and in sowing the seeds of the Renaissance and the Reformation. All learning had previously been the prerogative of the Church—but the monasteries were decimated, and as a result scholarship and the practice of the professions passed more and more into the hands of the lay community. Crime and lawlessness increased, corruption was rampant, and new standards of morality had in their turn influences on the forces of law and order, and on the mutual relations of individuals and of societies.

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## BIOGRAPHICAL NOTES

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Hlth. Educ. J., 1949, 7, 162—170

# PRIMITIVE MAGIC AND MODERN MEDICINE

By E. R. Leach, M.A.(Cantab), Ph.D. (London).

In modern Europe magic is normally regarded as either childish or fraudulent ; certainly it is not respectable. No European doctor would welcome a suggestion that he resorted to magical practices. Yet throughout human history, so far as one can judge, the practice of medicine and the practice of magic have been closely associated. All existing societies of the simpler or ' pre-scientific ' peoples have some recognised procedure for coping with sickness, such procedures are always in greater or less degree magical. Are we justified in supposing that modern western medicine is wholly free from this magical taint ? Or should we call it a taint ? It might be easier to recognise magical elements in our own behaviour if we could first free ourselves from initial prejudice.

European reaction to the medico-magic of primitives has usually been one of ridicule. Magic is classed as superstition ; its pursuit is often regarded as a symptom of the supposed mental inferiority of the savage. Anthropologists however adopt a more tolerant attitude. They argue that where genuine medicines are lacking the resort to magic is a positive action ; it at least provides both the patient and his kinsfolk with encouragement, it assures them that something is being done.[1] Is it not possible that such encouragement has real therapeutic consequences which are just as significant as the mechanical results of more scientific procedures ?

That really is the theme of this article. There are many elements in modern medicine which are clearly suggestive in their operation rather than mechanistic ; for example, the ' bedside manner ', long-winded illegible latin prescriptions, brightly coloured pills and medicines, the well advertised slogans of certain drugs and tonics, the general press publicity on new discoveries. Most practitioners would agree that such things have considerable influence upon a doctor's ability to bring about a cure. How far are these peripheral adjuncts to modern medical technique related to the age old magical practices of the primitive medicine man ?

To answer such a question one must attempt some sort of classification of the different forms of medico-magic and consider how far the resulting categories have their counterparts in modern practice.

[1]cf. Camilla H. Wedgwood. *Sickness and its Treatment in Manam Island, New Guinea.* Oceania, Vol. V (1934), pp. 64, 306.

### *Ideological Systems*

In the first place we need to note the broad classical distinction between magic and religion. Crudely stated, religion attributes unusual happenings to the intervention of supernatural beings, magic on the other hand explains them as the outcome of a special kind of power or skill possessed by the magician. Magicians who use 'medicines' believe that these substances acquire their virtue automatically as a result of the magical procedures that are worked over them. If the magic is correctly performed the medicine cannot fail. Empirical failures are explained as being due to mistakes in the ritual or to counter-magic by hostile magicians.

Magic in this most general sense can be either positive or negative, good or evil. Anthropologists usually refer to the negative malevolent kind as sorcery. While there are some people in our modern society who seem to fill the role of magicians, there are, I hope, no modern sorcerers. But that does not mean that we can ignore the concept of sorcery altogether. There are many primitive societies where there is a great deal of sorcery but very few sorcerers. This is possible because, since the purpose of sorcery is evil, its performance is secret. Hence the diagnosis of sorcery is normally retrospective,—a kind of symptom analysis. In the Island of Dobu in Melanesia for example it is believed that no illness or death can possibly ensue from natural causes, all such misfortunes are due either to overt violence, poison, or sorcery.[1] Such a pattern of ideas is not at all unusual.

Now in a context of scientific ignorance where the sick are more or less powerless to help themselves by rational procedures, there may be psychological advantage in putting all blame for misfortune onto other people. But such projection of responsibility has its counterpart among ourselves. Particularly in the case of minor ailments we are very prone to blame extraneous causes, the weather, food rationing, standing in queues, overwork. Is it an advantage thus to feel free of personal guilt, or is it a hindrance to self examination and the development of sane thinking and healthy living ?

Somewhat similar to sorcery is witchcraft. Unlike ordinary magic and sorcery the operation of witches is not simply the automatic result of any special kind of technical skill. Witches (wizards) are persons who harbour witch spirits and it is these witch spirits in disembodied form which pass through space and operate malevolently at a distance. This is often supposed to happen without any conscious knowledge or intention on the part of the human witch or wizard. Because witches are thus regarded as partly unconscious agents, we often find an ideology of witchcraft associated with some form of standardised emotional catharsis. In one pattern the unfortunate witch is made scapegoat for

[1] R. F. Fortune. *Sorcerers of Dobu*, 1932, p. 97.

the misfortunes of the community as a whole and is viciously punished for her (unconscious) crimes. In another pattern this social purge is accompanied by wholesale and quite fantastic confessions on the part of the accused witch. For example an Ashanti woman recently confessed to having slain by witchcraft her own six children, all of whom had died in infancy.[1] To complete the picture I would stress that an ideology of witches almost necessarily implies a further ideology of witchfinders or witchdoctors.

We can draw a further parallel here. In jest the psycho-analysts of today have been called the witchdoctors of the 20th Century. It is a fair comment. From an anthropological point of view the analyst's patients are true witches, caught in a morass of guilt for crimes they have never committed.

Or one might reverse the argument. Witchcraft is a phenomenon which seems to flourish greatly in times of rapid social change; it is linked with the decay of established religious institutions. It was so in Europe in the 16th and early 17th Centuries; it is so today in British West Africa. Witchcraft among the Ashanti, for example, is quite a new phenomenon linked with the social stresses of rapid westernisation. Missionaries and others who have to deal with such problems directly might well ponder whether witchcraft should not be regarded as a form of psychological illness closely analogous to the psycho-neurosis thrown up by our own rapidly changing civilisation.

There is also I think another analogy that might be drawn between the witchcraft of primitives and phenomena of our own society. Some witches, though possessing human associations, are impersonal, their identity is so vague that counter action against human scapegoats is inoperative. The most that one can do is to defend oneself by use of a generalised undirected magic. Such witchcraft is really simply a rationalisation of fear of the unknown, but the ideology is in no sense therapeutic; it serves only to make the unknown even more terrifying.[2]

Such generalised witches resemble in many ways the collective fear symbols of our own society. For some social classes it is 'the Reds' who plan all our misfortunes; for others it is 'They'. 'They' are not specific persons, the word represents an arbitrary undefined concept that embraces the whole hierarchy of government and bureaucracy from the Prime Minister himself down to the new clerk in the Food Office. Its sanction of power is in the welter of regulations which few understand but which are all carefully designed to give the impression that the most

[1]Miss B. Ward. Unpublished material.

[2]I have in mind especially the 'flying witches' of Melanesia, such as the *mulukuausi* of the Trobriands, and the *gelaboi* of Dobu. cf. B. Malinowski. *Baloma; the Spirits of the Dead in the Trobriand Islands*, in B. Malinowski's *Magic, Science and Religion and Other Essays* (1948), p. 129. R. F. Fortune *op. cit.*, p. 153.

appalling penalties await any transgressor. Being as it were human yet impersonal, ' they ' are beings against whom there is no rational defence. To attribute ill health or any other adversity to the machinations of ' them ' is tantamount to saying that it is useless to try to do anything about it, except perhaps in the realm of the purely magical.

To sum up this part of the argument: People who have no science at their disposal yet need ideological systems through which they can explain or guard against phenomena which are uncontrollable. I have listed four such types of ideological system which I have called religion, magic, sorcery and witchcraft. Collectively these form a general field of magico-religious phenomena. The categories are seldom clearly distinguished, usually they overlap and where they do they serve to provide a number of alternative explanations to the cause of sickness or death. The techniques of primitive medicine fit into this sort of ideology.

### *Diagnosis and Treatment*

Primitive medicine like modern medicine consists essentially of two parts, firstly diagnosis, secondly treatment. At the elementary stage of diagnosis primitive and modern doctor alike rely on overt symptoms,—fever, pain, bowel movements and so on, but in attributing causes to these symptoms there is a marked divergence of terminology. The modern physician talks learnedly of bacteria, viruses, vitamins and hormones ; the primitive practitioner explains all in terms of either sorcery, or witchcraft or assault by malevolent spirits.

As regards treatment, modern physician and primitive practitioner alike mix up magical (suggestive) elements with practical action. For it should be stressed that even people with completely mystical conceptions about the origins of illness may still handle minor ailments in a practical common sense manner. The magic merely supplements the common sense.[1] The actual treatment, whatever it is, will vary according to the particular conventions of the culture within which the medicine man operates. There are wide differences between what a West African Negro and a Bornean Dyak might recommend in similar circumstances. But whatever the treatment, it is likely to have the attributes of ritual, that is it will be a performance with a fairly elaborate standardised procedure and a considerable element of the dramatic. To give some examples: Where illness is explained as the result of sorcery, the doctor, after a spectacular performance, may end by extracting from the body of the patient (by sleight of hand) some material object which he asserts has been the cause of the illness implanted by the sorcerer. This is not simply an act of fraud on the part of the practitioner ; it is a symbolic

[1]cf. Camilla H. Wedgwood *op. cit.*, p. 280 ; H. Ian Hogbin, *Spirits and Healing of the Sick in Ontong, Java.* Oceania, No. 2 (1930), pp. 8 seq.

act, the removal of the evil causing ' thing '. The same actual material object may be used in such a ritual over and over again. Illness due to infestation by a witch spirit may involve exorcism, a dramatised symbolic driving out of the offending presence. Other societies postulate a spirit world populated by ghostlike personalities with human attributes but superhuman powers. Illness thought to be caused by attack from such spiritual beings may be treated by sacrificial offerings to the spirits concerned or perhaps by making offerings to still higher beings with a view to their intervention. Alternatively, in cultures where a spirit medium cult operates, the doctor will himself (or herself) usually be one of those who have the faculty of passing into a trance state and thus becoming a channel of communication between the quick and the dead. In some systems the dead are deemed to give oracular advice by speaking through the mouth of the medium ; in others the medium is an active agent, who, for payment, personally intercedes with the malevolent spirits or with higher powers.

Ideologically there is thus a wide range of variation. Illness may be regarded as due to mechanical causes or to attacks by spiritual beings. Treatment may be mechanical or symbolic or by either symbolic or trance-state contact with a supposed spirit world. Empirically however all these types of procedure have a good deal in common. In particular they are all spectacular and they are all expensive.

Medicine has long been a lucrative profession but I think it was the psycho-analysts who first suggested that the payment of a fee might itself be part of the therapeutic process. One potential difficulty for the National Health Service is that there is a class of patient for whom a free illness is almost a holiday. Primitive systems offer no such encouragement to malingerers. To give an example : Among the Kachins of North Burma illness is normally treated by sacrifices to spiritual beings. Offerings start at the level of a few eggs and a chicken but as the illness progresses proceed upwards through a series of pigs, calves, cows and finally buffaloes. The priest and his assistants receive a fee in each case. Moreover since all this meat is consumed by the community at large, village members bear the illness of a rich man with equanimity. Such systems would seem to offer every encouragement towards a rapid recovery. An adjunct to this procedure is that if the relatives consider that the patient is likely to die anyway they may make their offerings on a hire purchase basis. They offer the gods a chicken with the promise of a buffalo later if the patient should happen to recover ; they thus save their capital—a system as it were, of death duties in reverse !

Viewed from this materialistic angle the medical procedures of the simpler peoples appear perfectly rational. Instead of puerile superstition we see common sense suggestive medicine. The patient is given the

assurance that action is being taken on his behalf, and he is given an economic incentive to shorten the period of cure. The anxious relatives salve their guilty feelings towards their loved one by feasting their neighbours and resorting to carousal. Even modern doctors have been known to prescribe brandy for the relatives rather than drugs for the patient.

### *Doctor and Patient*

Let us now see how far the relation between doctor and patient in a modern situation parallels the relation between medicine man and client in a primitive situation. I am not sure that it differs very greatly. Consider for example the matter of medical prescriptions. It is true that the modern use of drugs is based on scientific study. But for the average busy practitioner drugs are merely substances which have power in themselves and provided that one combines them according to certain traditional formulae and carries out the appropriate rituals as laid down in medical text books all should go well. If the magic fails, then there is not much the doctor can do about it except try a different procedure or call in a consultant, i.e. another magician. This is just what the primitive medicine man does in like circumstances.

In any case whatever may be the precise mental attitude of the doctor towards the ritual procedures of his profession there can be little doubt that the average member of the general public adopts towards his doctor precisely that attitude of uncritical faith which the primitive client adopts towards the magician.

For the ordinary layman disease is not a rational mechanistic process of bacterial infection but a 'thing', a sort of pervading mysterious essence that hits you out of the blue. 'The 'flu', 'the mumps', 'the measles' are very close to the malevolent evil spirits to whose 'bite' many primitive people attribute the symptoms of illness. Even the expression 'to be *taken* ill' suggests just such an infestation of evil presences. The role of the doctor is almost that of exorcist. The patient has no means of evaluating the real knowledge or skill of his doctor, he reveres him simply as a person in authority, one who is able to control the mysterious powers that threaten life. Thus it is manifest in the event of an accident or sudden illness that the mere presence of a doctor is sufficient to relieve anxiety, whether or not the doctor is competent to handle the situation. Such uncritical reliance on authority suggests the attitude of children towards their parents, and of religious believers towards their priests. It is associated perhaps with a guilty conscience. In primitive societies illness is very often quite explicitly a symptom of divine punishment, the medium or priest healer is one who intercedes with the

deity to obtain remission of sins. Sometimes public confession by the patient is part of the routine of therapy.[1] So too the modern relationship between patient and doctor has about it something of the confessional. The patient needs moral as well as physical support. It is not merely that ailments such as venereal disease are readily interpreted as 'the wages of sin', but rather that over a very wide range of illness there is an undefined sense of guilt, of well deserved punishment, which the patient would like to off-load onto his doctor.

### *Magic*

As I have implied already, in most primitive societies there is no really clear distinction to be drawn between magic and religion. Magic, an essentially mechanical procedure, is at one end of the scale; religion with its reliance on supernatural beings is at the other; and in between we find a wide range of composite phenomena. Most religious acts contain elements of magic, most magical acts contain elements of religion. So too in the field of modern medicine which we have been discussing. The authority status of the doctor merges on the one hand with the authority of the priest, at the other it elevates the lowly status of the chemist's salesman. One of the most thought provoking phenomena of our present age is the astronomical sale of patent medicines, most of which have nothing to recommend them except astute advertisement and an impressive looking formula on the outside of the bottle. In this mass consumption of panaceas the intellectual discrimination is minimal. "Oh Mr. Jones, have you got anything for a sore throat, that stuff you gave me last week didn't seem to do no good", or "Have you got any . . . , they do say it's very good". Now here clearly is straight magic. The recommendation of the chemist or the slogan of the national advertising campaign is the counterpart of the magician's spell. Scientific diagnosis is irrelevant, it is the spell, the magic word, which gives power to the magical substance.

Typically magical is the fact that empirical failure has no effect upon the credence given to the value of patent medicines in general. If one 'guaranteed' cold cure doesn't work, then you try another. There is of course a small minority of persons who will say firmly that since science has not yet found a reliable cure for a common cold, it is a waste of time to dabble among the medicine bottles. But how few they are! How much more common the attitude "Oh well you never know; let's try a bottle, it might work". So too will a West African university graduate turn in a crisis to his traditional magical medicines. As long as uncer-

[1]cf. John Gillen, *Magical Fright*, Psychiatry, Vol. 11 (1948), p. 389. But sin may bring sickness on other than the sinner and it is not necessarily the patient who must confess; cf. R. F. Fortune, *Manus Religion*. Oceania (1931), p. 96.

tainty prevails, one has the need for reassurance and one turns to magic. " It might work ".

The grading of the practitioners of medicine into a hierarchy of alternative possibilties is also typical. In the Kachin system mentioned above the cheapest and least authoritative healer is the diviner magician ; if his magical treatments fail, he may diagnose a witch infestation and call for exorcism ; if that fails one starts a progressive series of sacrifices each to a different particularised member of the spirit world. There are thus an unlimited number of possible causes for any particular illness and failure of one treatment merely suggests progression to another more expensive. So too with ourselves ; the individual suffering from undefined ill health often ranges aimlessly through the wares of the chemist's shop before turning finally to the doctor for more authoritative assistance and even then reliance on the doctor may be qualified by co-equal reliance on patent medicines. Numberless patients, and not only the less educated ones at that, thoroughly bedevil their doctor's treatment by taking supplementary medicaments over and above anything that the doctor may himself have recommended. Yet if the patient really trusted his doctor he would not search for this additional reassurance.

### *The Real Criterion*

In other words good medicine needs something more than scientific skill. But what is good medicine ? One has to distinguish between therapeutic efficiency on the one hand and strict accuracy of scientific theory on the other. Surely the real criterion of good medicine is that in the context of its use it produces effective results ? If that be so, then many of the magical and ritual procedures of primitive peoples should rate as good medicine.

In the last analysis medicine is an art, not a science. Scientific knowledge grows but slowly ; doctors meanwhile must cure the sick. In practice they use what knowledge they have and supplement that knowledge with a good deal of hocus pocus and suggestion. And they get results. The primitive medicine man often gets results too, though in his case the proportion of real knowledge is almost nil.

My argument then is simply this. Modern medicine is judged on the basis of results and these results include many that are the product of suggestion rather than the mechanical outcome of medical treatment. The mechanisms by which these suggestive results are induced are closely similar to those which operate in the medico-magic of primitives. This is not a matter of which the modern doctor need feel ashamed. These magical skills are peripheral to his more normal medical techniques. Properly used they are an aid not a hindrance, for they give the patient

reassurance in just those situations where the strict mechanics of scientific medicines may seem especially ruthless and discouraging. Yet at best the use of magical suggestions is a necessary evil. Magical ideologies may provide a basis for confidence but they also inhibit self criticism. In the long run the aim of health education must be to develop confidence in scientific method for its own sake, without the need for any supplementary mysticism. But such confidence in science calls for mental maturity, and that means genuine education on the widest cultural basis. Short cuts to enlightenment will only result in the development of a new witchcraft to replace the old rituals and magical suggestion.

Finally as an anthropologist I would like to put in a plea for my own subject matter. Let me urge European doctors who work in backward areas to adopt a tolerant attitude to the ' primitive superstitions ' of the people among whom they work. These superstitions too in their own context may have genuine therapeutic value. It is the results that matter, not the jargon of ideas that go to build them up.

# HEALTH EDUCATION CONFERENCE

The Central Council for Health Education is holding a National Conference about Health Education on November 8th/9th at the Central Hall, Westminster. The President of the Council, Lord Woolton, will open the Conference, and will speak on "The Aims of Health Education." Mr. W. O. Lester Smith, Chief Education Officer for Manchester, will speak on "The Aims and Methods of Health Education," and he will be followed by Professor Andrew Topping, who will discuss "Health Education and the Prevention of Disease." An open discussion will follow.

On the second day, Sir Wilson Jameson will take the chair, and speakers will include Mr. D. R. Hardman, Parliamentary Secretary to the Ministry of Education, and Dr. Robert Sutherland, Medical Adviser and Secretary to the Council. This will be followed by a further open discussion.

A comprehensive exhibition of health education material will be on view during the Conference, and visits will be arranged to places of interest where health education is being carried out in practice.

Immediately following the Conference, on the 10th/11th November, a seminar will be held in B.M.A. House for Health Education Officers of Local Health Authorities. This will be a practical study group at which Health Education Officers and the technical officers of the Central Council will jointly examine and discuss the practical problems involved in health education.

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# PLANNING HEALTHY COMMUNITY LIFE

By K. E. Barlow, M.R.C.S., L.R.C.P., D.M.R., *Deputy Director (temp.), The Pioneer Health Centre, Peckham.*

When the Editor asked me to write about planning healthy community life I was brought up sharp by two questions. The first is—What is community life? The second is—When is it healthy? The answer in both instances is that we do not know. We could, however, try to find out. Not that we can pursue an effective enquiry by merely looking round about us—not even if we happen to belong to the august assembly of statisticians. What we see when we look around is a society of people who are not healthy and who have no community life. To study this material is only to study the absence of what we are looking for. How then are we to proceed and where are we to start?

Along our journey of enquiry there are signposts which it is reasonable to suppose point in the direction we are seeking to travel. They are the signposts of new sciences. Biology teaches us that creatures have a life history through which they pursue a course of development ; that they are woven into and out of the texture of their environment ; that they have a fundamental endowment of living powers which in each species is nurtured in a characteristic way ; that between the families and species of creatures and their environments all sorts of intricate balances are sustained. We may, therefore, say that biology gives us two main pointers. It calls attention to the course of human development in the family and in the individual: it also reminds us of the dependence of this process on the pre-existing order in the environment against which family development is in balance.

Anthropology—a lesser branch of social biology—tells us something about how groups of families have from time to time and place to place shaped their social environment and canalised their responses to it and to each other. In anthropology we see something of the zone of interplay between homes, of the dependence of local communities on circumstance and of the multiplicity of pattern within which from time to time human nurture has proceeded.

We can go to many other recently developed sciences for further indication. Dietetics shows us the dependence of growth and indeed of health on nutrition. Ecology throws a cross light on the balance between species and their habitat. Genetics strives to comprehend the pattern

within which the quality of biological endowment is shuffled as generation succeeds generation. And so one could go on cataloguing the indications which modern knowledge newly gives to the social biologist who enquires about the nature and the health of community life.

It might on the face of it be supposed that if we were to go into the universities within the faculties of which all these sciences are professed, we should there find that some coherence would be given to our apprehension. We might expect that the principles by which men seek to live in communities and by so living to reach the fullness of their social stature would there be enunciated. Unhappily experience fails to bear out any such supposition. Neither in the lecture rooms nor in the cloisters of research is any such coherence to be met with. Knowledge is broken up into fragments of which each professor has his store, but of the overall pattern out of which those fragments are so industriously chiselled the universities tell us little or nothing. Indeed those who have been appointed the trustees of our knowledge have made enquiry orthodox, and within that orthodoxy our apprehension at present stands confined. The trustees of this orthodoxy carry a heavy burden of responsibility.

### *A Formula*

In the meantime, outside the universities a very interesting and anomalous position is met with. The people of Great Britain have suddenly become aware of their lack of community life and quite characteristically they have mooted a remedy. This takes the form of a formula for the production of communities—now called neighbourhood units. In the application of this remedy everybody is to be involved—except the patient who must undergo the cure. He suffers the cure so, it is thought, he cannot be active in its administration. He must have his roads, his transport, his shops, his pubs, his place of work, his churches, his health and community centre and his schools planned for him or rather not for *him* but for the unit of population to which he belongs.

How does such a remedy look against the hints which social biology and kindred sciences are able to give us concerning community living and its health? At once two things must be said. The dimension of human development and its nurture has received no detached consideration by those who have formulated the new prescriptions for our community sickness. What is more it is a principle alike of physiology and embryology that the development of all the organs, faculties, skills and character of individual men and women—or for that matter of families—are sustained and furthered by their employment in an environment calculated to call them into use. This principle which affects all the constituent elements of a community has likewise been left out of account

by contemporary social therapeutics. On the whole, therefore, the formula for new communities, as at present expressed, is not a very promising one.

To the biologist it must appear that in shaping a new social environment the primary considerations must be to render the new setting fit for the development of the families who inhabit it: and—this is really part of the same proposition—to establish it in such a way that it will call into play (and at the same time be moulded by) the powers of its inhabitants.

We do not yet know what shape a community must take if the impulse of the families who compromise it to enhance their living is to be furthered. On the other hand we do in general know that the development of populations within a habitat, and of families within those populations, depends upon the balance they strike with their surroundings and the powers they are able to exercise in order to establish that balance.

This is not just a remote theoretical proposition. It is a plain statement of fact about the Smiths, the Jones, the Robinsons and the other specific families who are the potential constituent elements of our new communities. To these common people the fragmentation of academic knowledge, no matter in what degree it be accumulated, brings little if any increase of living. To solve their problems only something which enters into the interplay between them and their circumstances can be employed. If the scientist would know about the development of community life and its health then he must bring the resources of his universities to points at which family living goes on and where communities may emerge. It is not as if he knew the answers before his enquiries start. He does not. Nor will any orthodoxy of research teach him from its statistical tables. He must come with an open mind and enquire—as a mere looker-on who in time may hope to know something of what he has put himself in a position to see. If, however, he is to operate as a scientist he must be in a position to do an experiment. If he asks in what circumstances family life best proceeds to its maturity and how groups of families build up between themselves that common thing which we call community, he must be in a position to gain experience of the territory of his enquiry and as a first approximation to make certain qualitative judgements. The points he must start from are the pointers and indications with which the new sciences have provided him.

In the pursuit of such an enquiry he will gain encouragement from one source only—the families of common people who, isolated from each other in the endless suburbs of industrial England, find in their circumstances little to enhance their powers or to bind them to their neighbours. In a world of full employment human faculty and human association is everywhere unemployed. Nor is there room for associations of families

to employ their own powers to build their own community. I say this advisedly after having tried the matter out.

### *An Experiment*

In 1945 when the war in Europe was ending the people still believed that it would be possible for families to take a part in the shaping of their own community. At that time a Family Health Club was started in Coventry. Coventry, of course, had been badly blitzed and it was estimated that 20,000 new houses would be required in that city. The Family Health Club laid a claim that one tenth part of the families thus to be rehoused should, through their own housing society, build their own township—or neighbourhood unity. The Housing Society's tenants were to be the owners, the planners and the administrators of their own estate. In those days it did not seem unreal for families to be exercising a choice about the character of the estate they would live in, nor to be considering family health and what the now famous Peckham Experiment had to teach about it, to be looking into the question of schools, of diet, and preoccupying themselves with the all-absorbing topic of the design of dwelling places. So the Housing Society raised capital from its members and employed architects to explain the intricacies of planning regulations. It borrowed money and bought land. Part of this land was to comprise the society's farm, part of it was to contribute to the site of its new township. A second non-profit making company was launched to farm the land on its behalf. Actually at the present moment 240 acres of land are being successfully farmed, a T.T. herd and market garden have been established. Brandon Woods Farms Ltd., is a going concern albeit desperately short of capital.

The venture was launched on the assumption that contemporary society would welcome an association of families who were anxious to work out for themselves in their own neighbourhood some new system of community institutions which would give scope to the families within it to shape their circumstances to suit their living and so to promote their health.

This assumption in fact proved to be false. Opposition was met at Trades Council, Local Authority and Government levels, and, as the pattern of governmental action became clear, the expectation of the common citizen to be able to take effective action on his own behalf grew less. And now nearly four years after the club's formation the struggle to get licences continues. The Club has in its membership a hundred mining families. It has just been refused licences for 1949.

Curiously enough all this is not a story of defeat. It is clear that the Family Health Club has not yet set up the conditions for the experiment

it is anxious to carry out. It has not yet fully established its claim to do so. But an enquiry has already been carried out as to the strength of the appetite of the ordinary family to act on its own behalf. The Club's experience shows that this is very strong but can find little to feed on. The Family Health experiment up to the present has done little more than show how completely the present social policy and current orthodox opinion ignore and eschew the principles of family development. That demonstration must interest us all—if only because we have families and grow in families.

### *Basic Principles*

Healthy community life cannot be planned until two principles are brought into balance. The principles of action and of growth which are inherent in every family—just as in every cell—must be set in balance with its environment, and that environment must be made fit for and helpful to the life that grows and acts within it. Only within such an organic balance can what is called planning make any sense at all to a biologist.

The health of a community quite clearly has to do with the growth and nutrition of its organic relationships at every level—in the cell, in the tissue, in the organism, in the family and in the symbiosis between family and environment which we are learning to call its ecology. The disturbing spectacle of a so called Ministry of Health turning its back on all that biology has taught in the last century in order that it may reserve the last pennies of its budget for the hospitalisation of the individual sick, is but another example of contemporary inability to use what is known for the enrichment of our living. In due course however the laws of biology must prevail and in those days it will be more possible to pursue enquiries concerning the planning of healthy community life. In the meantime the Family Health Club now securely rooted in its own habitat strives to realise the shape of its growth with such nourishment as the eroded social soil affords.

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## BIOGRAPHICAL NOTE

K. E. BARLOW, M.R.C.S., L.R.C.P., D.M.R.—Middlesex Hospital. Was in general practice in Coventry until 1947. For a number of years he combined this with radiological practice. He is now temporarily deputy director at the Pioneer Health Centre, Peckham. He has written certain books.

# NATIONAL ASSOCIATION FOR MATERNITY AND CHILD WELFARE

*President:* Her Royal Highness The Princess Elizabeth

The Association of Infant Welfare and Maternity Centres was formed in 1912 in order to fill the need for a central organisation to frame standards of efficient work and afford guidance to those wishing to establish maternity and child welfare centres. This organisation was later named the National Association of Maternity and Child Welfare Centres and was amalgamated in 1938 with the National Association for the Prevention of Infant Mortality (founded in 1906). In October 1948 the title was shortened to its present designation.

The primary aims of the Association are the furtherance of education in matters connected with maternity and child welfare; the study and prevention of mortality and ill health among mothers and young children: the publication and distribution of books, journals and pamphlets promoting a sound knowledge of maternity and child welfare, including the collection and publication of statistics and reports: the organisation of conferences and meetings, local, national or international: and acting as a consultative body in connection with maternity and child welfare.

Membership of the Association is open to Local Health Authorities under the National Health Service Act: Local Education Authorities: Children's Committees: Regional Hospital Boards: Teaching Hospitals: voluntary bodies of national standing concerned with the welfare of mothers and children: local organisations (not being a branch of a national organisation) concerned with the welfare of mothers and children: individual members approved by the Council.

Offices: 5 Tavistock Place, London, W.C.1.

*The seventh in a series of notes on major voluntary organisations that undertake health education work.*

# BIOGRAPHICAL NOTES

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EDMUND RONALD LEACH, M.A.(Cantab), Ph.D.(London).—Graduated at Cambridge in 1932 as an Engineer; studied anthropology at the London School of Economics 1937–39 and again post-war; has had extensive anthropological field experience in China, Formosa, Iraq, Burma and Borneo. Spent the war in the Burma Army in both regular and irregular activities; finished as a Major. Now a lecturer in Department of Anthropology, London School of Economics.

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# ISOTOPIC TRACING IN PHYSIOLOGY AND MEDICINE

By John B. Jepson, M.A., B.Sc., D.Phil., A.R.I.C., *Lecturer in Biochemistry, Middlesex Hospital Medical School.*

A chemical element may exist in several modifications called ' isotopes ' of that element. These isotopes differ only in the mass of the atomic nucleus, and cannot be chemically distinguished. They can, however, be distinguished physically ; most natural isotopes have stable atomic nuclei, and can only be detected by properties dependent on their different masses ; the remaining isotopes have radioactive nuclei, and can be detected and distinguished by their emitted radiations. Natural carbon, for example, consists mainly of atoms of atomic weight of 12 (written as $^{12}C$) with a constant small proportion of stable $^{13}C$ ; in addition, two radioactive isotopes, $^{11}C$ and $^{14}C$, are known.

It is reasonable to suppose that the metabolic pathways of compounds differing only in their isotopic composition are identical ; abnormal isotopic composition can thus be used to ' trace ' the chemical history of an element, usually incorporated in a compound.

## *Tracer Technique*

Isotopic tracer research techniques are not as recent as the present intense interest in them might suggest ; it is more than 25 years since Hevesy used the natural radioactive isotope of lead to investigate the botanical absorption of lead, and 15 years since Schönheimer began his work on the metabolism of biological compounds labelled with natural deuterium (' heavy hydrogen '). The use of isotopes was limited by their enormous cost and lack of variety. But these limitations have been swept away during the war by the immense technicological achievement culminating in the release of atomic nuclear energy : the discovery of the chain-reacting pile which can produce almost limitless supplies of many radioactive isotopes ($^{14}C$, $^{35}S$, $^{131}I$, $^{32}P$, etc.), the building of large-scale plant to separate stable natural isotopes (deuterium, $^{13}C$, $^{15}N$, $^{18}O$, etc.), the development of equipment for handling and detecting isotopes, and the training of workers including many from the biological sciences and medicine in the methods of nuclear physics. Almost overnight, isotopes have changed from curiosities to absolute necessities, at least in Britain and America where radio-isotopes are made readily available to laboratories and hospitals. It is probable that few reviews of the use of isotopic tracers in physiological research will appear in future, for their applications are widespread and the techniques standardised, but it seems

opportune to discuss some of the new, and often quite revolutionary, knowledge of body processes obtained by isotopic tracer techniques.

### *Experimental Methods*

Although we are primarily interested in the *results* obtained by tracer technique, we must briefly study the experimental methods involved, because limitations of these methods dictate the significance of conclusions and the scope of tracer work. Isotopes are used as a permanently recognisable ' tag ' or ' label ' for an element, ion, atomic grouping, or whole molecule. If an organic compound is studied, it first has to be synthesised from simple isotopically-enriched inorganic material, incorporating the isotope into the compound at a known, stable position in the molecular structure ; the mode of synthesis is determined by the requirements of maximum yield based solely on the isotope used and on its unequivocal positioning—a task which tests the organic chemist's ingenuity to the utmost. Many of the most important biological compounds cannot be synthesised directly, but these may be obtained ' ready-labelled ' from organisms growing in an isotopically-enriched environment ; a plant growing in an atmosphere containing radioactive carbon dioxide will photosynthesise carbon-labelled starches and sugars ; sulphur-labelled penicillin can be extracted from moulds growing on media containing radio-sulphur as sulphate. The simultaneous use of distinguishable isotopes of the same element, or of two different isotopes in the same compound is an important refinement.

With radioactive isotopes, the tracer material usually contains only a small number of radioactive atoms in a large amount of ordinary material as carrier (low ' specific activity ') ; this is unimportant, since the measured specific activity of substances isolated is compared with the specific activity of the original administrated material, and the basis of tracer technique is that both materials are biologically identical.

The labelled compound can then be used to characterise its isotope-containing metabolic and excretory products, to follow its pathways in an organism or its reactions in a chemical system, and for analyses by dilution methods based on homogeneous mixing with chemically-identical non-isotopic material.

The character of the experiment determines the type of isotope to be used, either radioactive or stable. Radio-isotopes are readily detected and distinguished using automatic radiation counters ; the sensitivity of such measurements is so high that enormous dilutions can be permitted in the course of an experiment—Hevesy has actually measured the transference of a single dose of radio-phosphorus (as phosphate) from a rat to her offspring through three generations ! A half-life decay time is involved with each radio-isotope, varying from seconds to thousands of

years, and this largely governs the usefulness of any particular one; long-life radio-isotopes cannot be used in the human body because of the prolonged radiation hazard, so it is fortunate that radio-phosphorus, -sodium, -iodine, and -iron (those of greatest immediate medical interest) are of medium-life. Useful radio-isotopes of all biological elements except hydrogen, nitrogen and oxygen are available. Certain stable isotopes, which luckily fill the previous gaps, are available in smaller quantities, separated from the natural isotope mixtures by physical fractionation. They have the advantage over radio-isotopes that no time factor or radiation effects are involved in their use, but they require the complex mass-spectrograph for their detection and measurement, and much higher concentrations of isotope must be maintained.

Care must be taken to 'design' tracer experiments so that they are truly capable of demonstrating the point at issue—not always easy in complex biological systems. Parallel experiments using graded concentrations of isotope, or stable and radio-isotopes of the same element, have not revealed any divergence of biological reaction due to radiation effects or physical differences, though the possibility must not be ruled out.

### *Dynamic Systems*

Until a very few years ago, biochemists and physiologists regarded the living body as a machine with fixed structural parts, deriving its energy from the breakdown and oxidation of food constituents only (exogenous metabolism), and capable of a small rate of self-repair of its damaged or well-worn parts (endogenous metabolism); this concept was reasonably based on comparison of ingested to excreted materials. But since the introduction of isotopic tracer methods, this 'static' view of metabolising systems has been completely superseded by the current views which consider such systems to be in 'dynamic equilibrium'.

If a labelled amino-acid or protein is fed to an organism, the isotope can be found as a constituent part of proteins all over the body. For example, a very few minutes after the administration of nitrogen-labelled glycine, isotopic-nitrogen has been incorporated into the structural proteins of the intestinal mucosa and liver, mainly as the residue of glycine; later, it appears in the less metabolically active proteins of brain and muscle; still later, a tendency to slow equipartition occurs, the nitrogen being distributed in many other amino-acids and compounds, and gradually it is excreted as urea, creatinine and so on. The same results hold for the carbon-chain and acid group of amino-acids, and for the sulphur of methionine. This has allowed a direct proof that the essential amino-acids cannot be synthesised in the body from the non-essential amino-acids. Thus we see that the normal balance between nitrogen intake and output

is certainly not due to chemical inertia, for the cellular proteins and their constituent amino-acids are in a state of continuous breakdown and renewal in which appropriate molecules of the ' food ' participate (continuing metabolism), but is a reflection of the steady state of the integrated dynamic equilibrium. The previous rigid distinction between exogenous and endogenous protein metabolism now disappears, though the latter term would still seem applicable to the very slow *net* breakdown of tissue protein which is indicated by the gradual loss of nitrogen or sulphur into the urine.

The rate of incorporation (or ' turnover rate ') of amino-acids can be determined by measuring either the formation of labelled proteins or their rate of disappearance ; the order of decreasing metabolic activity of various organs in respect of protein appears to be : intestinal mucosa (particularly at the duodenum-jejunum junction), pancreas, kidney, liver, heart, brain, muscle ; the plasma proteins probably mediate in the interchange of amino-acids between tissue proteins but we have no knowledge of the mechanisms involved.

A dynamic state has also been shown to operate between stored and circulating carbohydrate, and, more surprisingly, between dietary fat and stored body fat, by the feeding of labelled sugars, glycogen precursors, fats and fatty acids. An interconversion of higher fatty acids occurs in fat which has already been laid down and which was formerly considered ' static '.

It is generally accepted that the metabolic pathways of the three major dietary components merge, to yield identical intermediates at the focal point of oxidation to carbon dioxide and water. This ' final common pathway ' serves as a pool of intermediates from which complex molecules can be synthesised as required, and through which the carbohydrates, fats and proteins are interconverted. Work with the stable and radio-isotopes of carbon has provided much of the evidence of its widespread function, showing directly, for example, that the acetoacetic acid of ketosis arises from the self-condensation of the two-carbon fragments into which all fatty acids are initially oxidised, and that carbon dioxide can contribute only the two middle carbon atoms to an animal-synthesised glucose molecule.

### *Metabolic Pathways*

Isotopes have been used to investigate the detailed chemical pathways involved in the synthesis and interchange of natural compounds in whole organisms, perfused organs, tissue slices and isolated enzyme systems. Labelled compounds are introduced into the system, followed by isolation and isotopic investigation of intermediate and final products.

Such work has made important contributions to our knowledge of enzymatic processes, and increased the possibilities of developing rational medical treatments to control or cause conditions of specific enzyme derangement.

Normal feeding experiments had suggested that the essential amino-acid *tryptophan* could be transformed into the vitamin *nicotinamide*; tracer studies with tryptophans labelled at different carbon atoms of the molecule have confirmed this very strange transformation and identified several of the intermediate stages. Tyrosine fed to diabetic animals causes ketosis to develop, but it was not known if the amino-acid itself was oxidised to the excess acetoacetic acid or merely stimulated other ketone-producing reactions; using labelled tyrosine, the former possibility has been shown to be correct and the atoms involved identified. Feeding glycine labelled with isotopic 'heavy' nitrogen and/or carbon to humans has shown that glycine is specifically utilised in the synthesis of the porphyrin portion of haemoglobin. Studies with this nitrogen-labelled haemoglobin have shown that normal red-blood-corpuscles have a 'life-span' of 120 days, with lower values and indiscriminate destruction in anaemic conditions; unlike the red-cell iron, the porphyrin from a destroyed cell is *not* re-utilised in haemoglobin synthesis.

It has generally been held that the uric acid excreted by man arises solely from the oxidation of purines from ingested nucleoproteins; but it has recently been shown that uric acid can be synthesised in humans from simple labelled precursors (glycine, formate, and so forth) which give rise to specific parts of the molecule, probably indirectly; it is also found that identical mechanisms exist in birds which excrete *all* their dietary-nitrogen as uric acid—a further example of the breakdown of the idea of separate exogenous and endogenous processes.

### *Absorption and Excretion*

Important results on the absorption, distribution and excretion of elements and ions have been obtained by the radio-tracer technique. It has been found especially useful to trace the micro-elements of the body, iodine and zinc for example, since their radioactive isotopes are detectable below the sensitivity of chemical tests.

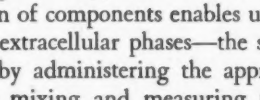
The rate of absorption of ions from the gut and the percentage of faecal material which is due to unabsorption can be directly measured. Sodium and potassium are absorbed and distributed in the human body with great rapidity: radio-sodium can be detected in urine within ten minutes of absorption and in milk within twenty minutes. The rate of absorption of iron from the gut is now readily determined; the use of a radioactive iron isotope by Hahn and his co-workers has shown that iron absorption

from stomach and small intestine is controlled by the state of the body's iron reserves, and not directly by anaemic conditions as such. The site and rate of calcium and phosphorus accumulation in bone can be shown by ' radio-autographs ' from bone sections placed on photographic plate ; the specific concentration of iodine by the thyroid can be measured *in situ* by an external counter ; the capacity of different organs to absorb toxic materials (e.g. isotopically labelled mustard-gas, or radioactive lead, or plutonium) can be compared.

### *Cellular Phases*

The highly selective permeability of cell boundaries allows the entrance and retention of essential compounds and the elimination of metabolic and waste products—in short, a *regulation* of metabolism just as important as internal enzyme regulation. Our present meagre knowledge of permeability mechanisms should soon be extended by measurement of rates of penetration of labelled ions and compounds into tissue cells, into body fluids such as cerebro-spinal fluid, and across the placenta. The rapid and selective distribution of components enables us to determine the total volume of cellular and extracellular phases—the so-called ' water space ', ' sodium space ', etc.—by administering the appropriate labelled agent, allowing homogeneous mixing and measuring the degree of dilution undergone. The red-cell volume can similarly be determined by injecting a known quantity of labelled red-cells from a donor previously fed radio-iron.

In this article it has only been possible to touch upon some aspects of the newer knowledge which the isotopic-tracer technique has brought to physiology, biochemistry and medicine, but readers will perhaps have gained some idea of the power and versatility of the methods at our disposal.



## BIOGRAPHICAL NOTE

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# BODY AND MIND

By Geoffrey Evans, M.A., M.D., F.R.C.P., *Consulting Physician to St. Bartholomew's Hospital.*

The present trend of medical practice is to emphasise the ascendancy of the mind and there is in consequence a danger of our forgetting how much the body can influence the mind. It is, of course, well known that an organic disease, apart from disease of the brain, is often accompanied by mental and emotional disturbance. Pernicious anaemia may be complicated by mental changes such as depression, failure of memory and even a toxic psychosis with delusions of persecution ; in exopthalmic goitre an excitable, unstable emotional state is characteristic of the disease, and in severe heart disease restlessness and hysterical manifestations are common. In general terms it may be said that a large variety of organic disease is well recognised as having an effect on the patient's mind, but the effects of functional disorders on the outlook and the state of mind are not so clearly appreciated.

A large proportion of patients seen by a doctor in general practice are suffering from functional disorders—a disorder or disturbance of some organ of the body without organic disease or change in structure. Some of these present themselves to their doctor with symptoms that indicate a disorder of the psyche : they are chiefly complaining of such symptoms as depression, anxiety, worry, loss of energy, headaches of various kinds and insomnia.

In other cases the symptoms may simulate organic disease and a patient may complain of sensations that suggest an ulcer in the stomach, inflammation of the gall bladder and many other varieties of gastro-intestinal disease. Rheumatic symptoms are also common. The person who is suffering from these complaints, which may be of years long-standing, is so tired of them that the description of the symptoms whatever their nature is often in greatly exaggerated terms and phrases. The diagnosis often attached to this group of cases is an anxiety neurosis or anxiety state, indicating that the primary disturbance is central or emotional. There is often support for this diagnosis in the fact that the individual has experienced or is suffering such ill-fortune as may well account for symptoms, especially for such symptoms as depression, anxiety, headache and sleeplessness. More recently the condition has been diagnosed in terms of a psycho-somatic neurosis. This term also attributes the primary disturbance to the psyche and it regards the somatic symptoms, as for instance symptoms that simulate an ulcer in the stomach, as secondary to the emotional disturbance.

From the point of view of treatment this interpretation of the patient's symptoms leads to a central or psychological approach, that is to say treatment by reason, explanation and suggestion to make it clear to the patient that the trouble is really of central nervous origin and that by an alteration of outlook and an adjustment of the mind the physical symptoms can be cured.

### *The Somatic Approach*

In contrast, the peripheral or somatic approach is exemplified by the case of a man aged 69 who was persuaded by his son (himself a medical man) to consult his doctor on account of deep depression. The man had recently lost his wife and was inconsolable, but he kept going, continued to do his business and saw his friends. He felt that consultation with a doctor was useless, but did it to please his son. His doctor gave him a careful overhaul, found him organically sound and explained to his patient that grief is a most fatiguing sensation and that the man required complete rest in bed. The patient refused this because he said it would add to his gloom and he would spend the whole time thinking about his dead wife and would be unable to sleep. However, he was persuaded to spend a fortnight in bed. He was advised to spend the day thinking about his wife and he was given medinal and aspirin to secure a good night's sleep.

By these means he recovered from his state of exhaustion and he was so much better when he saw his doctor a month later that he volunteered the remark that he did not miss his wife as much as he thought he should. This is a somewhat extreme example of a common state of affairs among people at the present time. It is a usual habit for many people to go to bed at 11 o'clock, when they would be better in bed at 10 o'clock. As a result they may be too tired to sleep, or their sleep may be incomplete so that they have to be woken in the morning. The result is that they live their lives habitually and unconsciously over-tired. Over-fatigue is a cause of irritability and depression and often too it leads to indecision or slowness in reaching a decision. It blunts initiative and weakens a man's drive. When these things are put together the habit of worrying may be well accounted for, because worry is so often due to lack of decision and inability to solve a problem or hesitation to take action even on a simple matter. Much may be gained, therefore, in any case of anxiety neurosis, by advising a proper routine of living and securing for the patient a peaceful sleep at night, if possible by some means other than the prescription of sedative drugs.

Nervous tension and irritability, emotional exhaustion and worry are fruitful causes of various forms of indigestion including loss of appetite, flatulent dyspepsia and biliousness. These symptoms may be intermit-

tent and simulate organic disease such as peptic ulcer or gall-stone colic and they may be due to any kind of emotional strain, such as difficulties in business or unhappiness at home. It is remarkable, on occasion, to see a man recover control of his business affairs, or, of his own accord, solve his difficulties at home without any help from his medical adviser in solving these problems, but simply by taking a small dose of sedative such as Amytal ½ gr. before breakfast and before supper. The sedative effect of the Amytal breaks the vicious circle of fatigue, worry, irritability and the additional fatigue which worry and irritability cause.

Women respond less often than men to such a simple prescription because their thoughts and emotions are more closely linked. Their method of recovering from overstrain and regaining emotional poise is to get away from their trouble, whatever it is, perhaps only for a week-end, but better for a week or a fortnight, at frequent intervals. However difficult this may be it can generally be managed when the alternative is a nervous breakdown.

Disturbed emotional states are a common cause of constipation, and the rational treatment might seem to be to remove the emotional strain or conflict by psychological treatment. The patient, however, may be able to do this for himself if his physical mechanisms are restored to good order, that is to say if his constipation is cured. The fact is that the initial insult, the emotional disturbance whatever its cause, may be acute at first and cause constipation, flatulence, abdominal discomfort or diarrhoea. As time passes, and over a period of months or years, the emotional strain becomes somewhat less, but the physical disturbance persists and tends to be attributed to the emotional or psychological background. It may be, however, that the persistence of the physical disturbance is due entirely to an acquired organ habit. If this is so the recovery of normal function by a correct peripheral approach may restore the patient to such physical health and well-being that he is able to see his trouble in better perspective and find the solution for it himself.

### *Drug Habits and Mental Health*

Another aspect of mental health concerns what may be called the individual's ordinary drug habits. Even when these are moderate the possibility of idiosyncrasy, either natural or acquired, must be taken into account. Tea drunk at ordinary times, namely at breakfast and tea time, rarely does any harm, but it may cause indigestion in people who also drink it before breakfast, and in the mid-morning, the early afternoon and the evening. Coffee with breakfast generally helps digestion and may have a mild laxative effect, but taken after supper at night it may disturb sleep. In general tea and coffee, because of their content of

caffeine, are digestive stimulants and are likely to do good. The same perhaps applies to alcohol taken with meals and in moderation ; but on account of its sedative effect brainworkers are best without alcohol until the evening meal. It is more common to have an idiosyncrasy to alcohol than to tea and coffee. For this reason, and also because it is habit-forming and too often taken in excess of the individual's optimum dose, it is a common cause of headache, irritability, mild depression and other nervous disorders, and indigestion. Tobacco smoking to excess may be a cause of palpitations and irregular action of the heart (extra-systoles). It may be a cause of deficient circulation in the lower extremities and when it is responsible for sub-sternal pain it may cause anxiety and a fear of heart disease. To the extent that these drugs may interfere with the smooth working of bodily mechanisms and so be responsible for symptoms of somatic disorder, they may be the cause of anxiety states and they should always receive full consideration in any neurotic or psycho-neurotic individual, either before treatment on psychological lines is undertaken or co-incidentally with it. People have rather fixed habits with regard to tobacco smoking and to drinking, whether it is tea, coffee or alcohol, but it does not follow that, because a certain habit has been followed without harm and perhaps with advantage for 20 years or more it may not suddenly do harm. It is by no means unusual for this to happen because an individual has lost his tolerance of the drug for some reason or other, or even because he has developed an idiosyncrasy to it. Enquiry should be made, too, as to other drug habits, of which the commonest in these days is the habit of taking a barbiturate at bed-time or even a small dose of barbiturate two or three times a day. The variety of names given to barbiturates in common use, as also the fact that a small dose of barbiturate is often included with another drug in proprietary preparations, has led to what amounts to an abuse of these drugs perhaps greater and more harmful than the abuse of alcohol in these days. Barbiturates have the disadvantage of being habit-forming. They are sometimes the cause of giddiness, unsteadiness of gait and other nervous symptoms, but perhaps their most serious disadvantage is that they tend to lower morale. Barbiturates are largely prescribed for neurotics and it is in these that emotional disturbances and fears may be aggravated by barbiturates. In fact they may cause restlessness and excitement rather than depression. They may be responsible for headaches and digestive disturbance, such as nausea and even vomiting, and in psychoneurotic subjects who are hypersensitive to them, barbiturates may cause fibrositic and neuralgic pains of different kinds. The trouble is that a barbiturate may suit a patient very well, and for months or years on end it may give him the peaceful night's sleep that he requires ; and then of a sudden, as in the case of alcohol, he may acquire an idiosyncrasy to the drug and

as a result develop an allergic reaction in the form of nettle rash, asthma or eczema.

### *Housework as an Emotional Outlet*

The greatest success and often the greatest happiness in life is due to a constant, all-absorbing passion for a person, an undertaking or an idea. Any attempt, therefore, to divert a person's interest to an object other than his habit, natural bent or heart's desire, should be made with caution. There is no doubt, however, that those whose interests in life are very narrow or possibly single are more liable to worry in face of too great difficulties and obstructions, or suffer a nervous breakdown in the face of failure even though as seen by the onlooker the failure is only temporary. And so it is natural that people should say that it is an advantage to have a second interest or hobby. It is a diversion on which thoughts can dwell, and a relief from the pursuit of the main objective. But for the medical practitioner in advising alternative occupation for the ' monomaniac ' who is over-tired there is no risk in advising his patient occupation with household duties. An example is provided by the case of a man aged 62 who was much occupied with committee work and community affairs. This man found his objectives difficult to achieve, the committees of which he was chairman did not share his ideas, as a result he suffered from lack of sleep, worried himself into a nervous breakdown and became suicidal. This man suffered from the disadvantage of having lost his only son in the war and his public work was his great interest in living. His doctor, having failed to lift this man out of his depression by ordinary means, was in doubt as to whether to advise electrical convulsive therapy or leucotomy, and for decision on this matter he referred his patient to another medical practitioner. The consultant took the view that the nervous breakdown was due to an unbalanced activity of intellectual faculties and that recovery could be achieved by providing occupation in other directions. He therefore advised resignation from all committees for six months and at the same time advised that the man should cook his meals and eat them and then wash up. There were difficulties in accepting this advice because his gardener came in to cook the breakfast, a daily woman cooked the lunch and his wife cooked the evening meal. However, it was agreed that these three persons should be given a holiday from their duties. The man was so lacking in decision and initiative that at first he could only make tea and toast for breakfast. He soon learned to make porridge and within a fortnight he had learned to cook the midday meal. In a month he cooked the supper too and on this regime he made an uninterrupted and complete recovery. There is no doubt that the use of the hands and fingers is an emotional outlet or sedative, especially when directed

to creative work, and though household duties that are too continuous and have to be performed seven days a week for months or years on end may create staleness (as they do) and get a person down, it must be emphasised that they are a source of satisfaction and it would be a contribution to mental health and vigour if every member of a household shared in them to some extent.

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## CLEAN FOOD

The Conference on the Food and Drink Infections in October 1947, convened by the Central Council for Health Education, has been followed by a very greatly increased interest in the question of food hygiene, and readers will be interested to hear of the following two resolutions:—

1. Passed at the annual meeting of the National Federation of Women's Institutes in April 1948.

"That this meeting wishes to register a protest against the dirty way in which food is handled, distributed and served in this country and urges the Women's Institutes to help the authorities in every way possible to remedy these deplorable conditions."

2. Adopted at the annual conference of the National Council of Women, October 1948.

The National Council of Women urges the Government to put an end to the loss of food through contamination and consequent loss of human energy through infection by:—

1. Making it compulsory for all local authorities to pass and enforce adequate by-laws for the protection and clean handling of all foodstuffs.
2. Making compulsory the early and frequent removal of refuse.
3. Making compulsory in all places where food is handled adequate hand washing facilities in close proximity to toilets.
4. Raising the standard of public and personal hygiene by increased propaganda through films, posters, lectures, broadcasting, etc.
5. The National Council of Women also urges the Minister of Health to repeal clause 7 in section 14 of the Food and Drugs Act, 1938.
6. The National Council of Women urges a higher standard of cleanliness and comfort in trains and railway refreshment rooms, and an improvement in the standard of food supplied in refreshment rooms.

The Minister of Food has shown his awareness of and interest in this problem by appointing a Catering Trade Working Party, which first met on 26th November 1948. Its terms of reference are:

"To make recommendations to the Ministers of Food and Health and the Secretary of State for Scotland as to precautions which are considered practicable and desirable with a view to securing the observance of sanitary and cleanly conditions in the catering trade."

The Working Party meets under the distinguished chairmanship of Sir William Savage, and the Central Council is represented upon it by its Medical Adviser and Secretary.

# FILMS

**A PLAN TO WORK ON. 35 and 16 mm. Sound. Black and white. Central Office of Information for the Scottish Council for Health Education. 34 mins. Availability: Free loan from the Central Film Library. 1948.**

The commentary takes the form of a dialogue between Mr. James, the town planner, and the Town Planning Committee, and between Mr. James and his wife in the evenings. The whole is illustrated by some excellent and beautiful photography.

The town is Dunfermline. Previous plans are shown with narrow and very congested main roads radiating from the centre of the town. New plans are made to separate industry and commerce from the houses, to develop open spaces for recreation and to by-pass the centre of the town for through traffic.

The main factors of town planning are all brought into the film and it shows how an old town can be replanned with a minimum of disturbance. Thus the film is of general interest but its outstanding value is as a historic record of Dunfermline.

It would be interesting to general audiences but many people would find it too long. It would be useful to students of town planning and architecture.

L. E. H.

**OLD WIVES' TALES. 35 and 16 mm. Sound. Black and white. Cartoon. Produced by the Ministry of Information for the Ministry of Health. 8 mins. Availability: Free loan from the Central Film Library. 1946.**

The film explodes three fallacies:—

1. Ne'er cast a clout.
2. A little dirt won't hurt you.
3. Night air is dangerous.

By means of humorous cartoons and animated diagrams it shows that the amount of clothing required depends upon the occupation at the time and the temperature of the outside air. The danger from flies and dirty hands is illustrated to explode the second fallacy. The third point is emphasised by showing a child in bed with the window open and the Old Wife hurriedly closing the window. A very simple scientific explanation follows.

The points are well made and the cartoons clever, but scientific accuracy is sacrificed to simplicity in several places.

The film is suitable for showing to general audiences.

L. E. H.

Hlth. Educ. J., 1949, 7, 190—192

# BOOK REVIEWS

THE NATIONAL HEALTH SERVICE, by Charles Hill and John Woodcock. (Christopher Johnson Publishers Ltd., 109 Great Russell Street, W.C.1. 1949. Pp. 283 + cl. Price 16s.)

This excellent volume attempts, as the preface says, to explain the anatomy and physiology of the National Health Service in language as simple as accuracy permits.

The plan of the book is well conceived and adequately executed. In some twenty chapters, the main aspects of the various branches of the service are described in a way that is at once intelligible to the ordinary citizen, while the appendices are a compendium of useful information in regard to Hospital Boards, Teaching Hospitals, Executive Councils, and so on.

The authors are careful to point out that the National Health Service Act does not confer on any citizen a legal right to a complete service. What it does is to impose on the Minister of Health the duty of promoting the establishment of such a service—a very different matter.

Nevertheless a very extensive service is already in existence, and the rights and duties of citizens in relation to Hospitals, Specialists, Medical Practitioners, Dentists and Opticians are clearly explained, as well as the corresponding rights and obligations of the practitioners and hospitals to the patient.

There are most useful chapters on the Health Services provided by Local Health Authorities, and on the Mental Health Services, while the comments on the Superannuation and Compensation Regulations throw considerable light on these somewhat complicated provisions.

HENRY LESSER.

CAREERS IN LOCAL GOVERNMENT AND ALLIED SERVICES, by J. B. Swinden. (N.A.L.G.O. 1949. Pp. 180. Price 7s. 6d.)

Few readers can fail to be impressed by the amount of information contained within the relatively small compass of this handbook, written by the former deputy secretary of N.A.L.G.O. Its object is no less ambitious than to describe for the benefit of young men and young women choosing a career the variety of work and interest now open to those who enter Local Government Service. In doing this it deals with every conceivable department of a local authority, indicating the kind of work, the grades of staff who do it, the method of entry, the salaries paid, the conditions of service and the prospects of promotion. Not content with this it goes on to detail the various professional and other qualifications which are either necessary or desirable, the names and addresses of the different examining bodies, the subjects of examination and in most cases even the examination and other fees. In this way more than 50 professions are covered. As a mere catalogue of facts this would be tedious, but the author has achieved his object in so compact and interesting a way that it is possible to read it with pleasure although one may have no personal concern with the matters discussed. A useful introductory chapter by a vocational guidance psychologist shows how the reader may, if he can be honest with himself, determine his own aptitudes and so choose the job for which he is best fitted.

This book can be thoroughly recommended to all those who are concerned to assess the possibilities of a career in local government, as well as to parents, teachers and others who are from time to time called upon to advise on this subject.

F. CAMERON OSBOURN.

BIOLOGY IN THE SECONDARY MODERN SCHOOL, by Frank Tyrer, and SOCIAL BIOLOGY FOR SIXTH FORMS, by Eric Lucas. (The British Social Hygiene Council, Tavistock House North, Tavistock Square, London, W.C.1. Pp. 12 and 15 respectively. Price 1s. 1d. each. Post free.)

*Biology in the Secondary Modern School* is an excellent little book by a teacher of much experience in this type of school. The scheme is based upon social biology, and its use should make the transition to biology from nature study after Primary School an easy one. It covers a four-year course and offers very good suggestions for linking up biology and health education with the world outside the school. The B and C streams are not forgotten and there is a good bibliography for class use, for pupils' library use and for the teachers' guide and reference.

*Social Biology for Sixth Forms* is an account of a course lasting for three terms which has been carried out successfully over a number of years for boys in sixth forms. It is a brilliant contribution to the question of the general education of those pupils and it has been written specially to help those teachers who are trying to start or to plan such a course for their boys or girls. There is a helpful bibliography.

P. M. TAYLOR.

SOCIAL BIOLOGY AND THE TRAINING OF TEACHERS, by E. Watson. (Educational Paper No. 3. British Social Hygiene Council. 1949. Pp. 10. Price 1s.)

Realisation of the aims and possibilities of social biology in the school is urgent and the B.S.H.C. is doing well to present us with yet another paper on this subject. Miss Watson's paper will be useful not only to the trainers of teachers but also to those teachers who wish to establish this type of biology in the higher forms of their schools. The present paper discusses the aims of social biology (not the least of which is that it must expand from a sure foundation of biology); it points the way to method; and it submits a useful key-plan based on Group Life, on the efficient functioning of the individual towards health; on Social Health and on Reproduction, Family and Heredity.

We need many more biology teachers to work out schemes of social biology in practice: here is sound advice.

P. M. TAYLOR.

THE YOUNG STUDENT'S BOOK OF CHILD CARE, by Mildred Lister. (Eyre and Spottiswoode Ltd. 1949. Pp. 132. Illus. Price 4s. 6d.)

This book is intended for the schoolgirl taking a course of mother-craft, and contains much sound advice on the care and management of the normal infant and toddler. Not everyone will agree with the author's advice that training in the use of the pot should be carried out regularly from the age of a few days, and the description of the ideal nursery is perhaps so far beyond the range of practical politics in most homes that the student will feel that it is impossible to make any attempt to live up to it. These are minor points, however, and the subject is generally well presented, the style extremely readable and the information accurate and within the understanding of the average older schoolgirl.

N. S. CLARK.

UNDERSTAND YOUR CHILD, by D. B. Hudson. (Research Books Ltd. in association with William Heinemann. 1949. Pp. 101. Price 5s.)

This is a thoroughly sound little book intended for "parents, teachers and all students of child behaviour".

The author describes the normal development—physical, mental and emo-

tional—of the child from birth to the age of five, and then discusses briefly some of the commoner behaviour problems in children, with proper emphasis on the part which instability in the home and over-anxiety in the parents may play in producing these problems.

As the author himself admits, there is a certain amount of repetition in the first section of the book. This might to some extent have been avoided by omitting the section entitled "The Enlarging World", and redistributing some of the matter contained therein among the sections describing the child at various ages.

N. S. CLARK.

SEX AND MARRIAGE, by Norman Robertson. (Research Books Ltd. in association with William Heinemann. 1949. Pp. 46. Price 2s. 6d.)

This little book is headed "A guide to sex conduct for men and women, and a comprehensive treatise on the physiology of sex." The basic philosophy is sound, and the book would undoubtedly be a useful guide to lay persons perplexed by ignorance and misinformation about sex, but it can certainly not be described as comprehensive. It would be of greater value if the arrangement were more orderly and the wording simpler. Examples of sex problems are scattered more or less haphazardly throughout and often involve reference to later chapters. The glossary does not include all the difficult words, some of which are not really necessary in the context. The anatomical descriptions could be made much clearer by simple diagrams.

Methods of contraception are discussed briefly. Many readers would probably find more details useful, for example the method of calculating the 'safe period' and the proper use and care of the vaginal diaphragm. The latter, incidentally, is not quite the "perfect method" which it is stated to be.

So short a book might well include a list of more detailed works on the subject to which the interested reader could refer.

DUGALD BAIRD.

PUBLIC AND PERSONAL HYGIENE, by F. A. E. Crew. (St. John Ambulance Association. 1949. Pp. 121. Price 2s. 3d.)

In the publication of a new and 4th Edition of this small handbook the Author, an eminent scientist, introduces his readers to the subjects of Public and Personal Hygiene through the biological approach.

Boldly defining the positive side of health, Professor Crew shows, in eight short chapters, how this may be achieved. In the treatment of conventional subjects the style and pattern of thought are lucid, individual and wholly delightful to read.

As a small textbook for the lay reader its purpose is admirably met. Even the most exacting will find facts to assimilate or philosophy to ponder.

G. HAMILTON HOGBEN.

PHYSICAL RECREATION, Vol. I, No. 1. Jan.-April, 1949. (The Central Council of Physical Recreation. Pp. 40. Illus. Price 1s. Quarterly.)

This Journal absorbs two publications, *Recreation Review* and *Physical Recreation Bulletin*. Its chief aim is to give news—news of what is being done, said, and written in the field of physical recreation. This is certainly achieved in its first issue, for it is packed with news concerning games and sports throughout the world. Articles and reports by well-known authorities, include "Lessons of the XIV Olympiad" by the Rt. Hon. Philip Noel-Baker, M.P. Illustrations and production are excellent. If the standard of the first issue is maintained, a wide circulation will be assured and deserved.

A. W. BROCKS.

# SUMMER SCHOOL 1949

This year the Central Council for Health Education will hold its Summer School in health education at Eastbourne from Thursday 28th July to Thursday the 11th August 1949. The outstanding feature of the Central Council's Summer Schools is that they give members of different professions an opportunity for joining in study and discussion of the content, principles and practice of health education. The School this year will be on more advanced lines than formerly and should be of particular value not only to those attending such a school for the first time but to students who have attended former summer schools in health education. A development of the tutorial discussion group technique will ensure the active participation of all students and a practical and realistic approach. The School will be residential and will be held in the School of Domestic Economy, Eastbourne. The inclusive cost per person will be approximately 16 Guineas. Further details will be sent to all who apply to—

THE MEDICAL ADVISER AND SECRETARY,

THE CENTRAL COUNCIL FOR HEALTH EDUCATION,

TAVISTOCK HOUSE, TAVISTOCK SQUARE, W.C.1.

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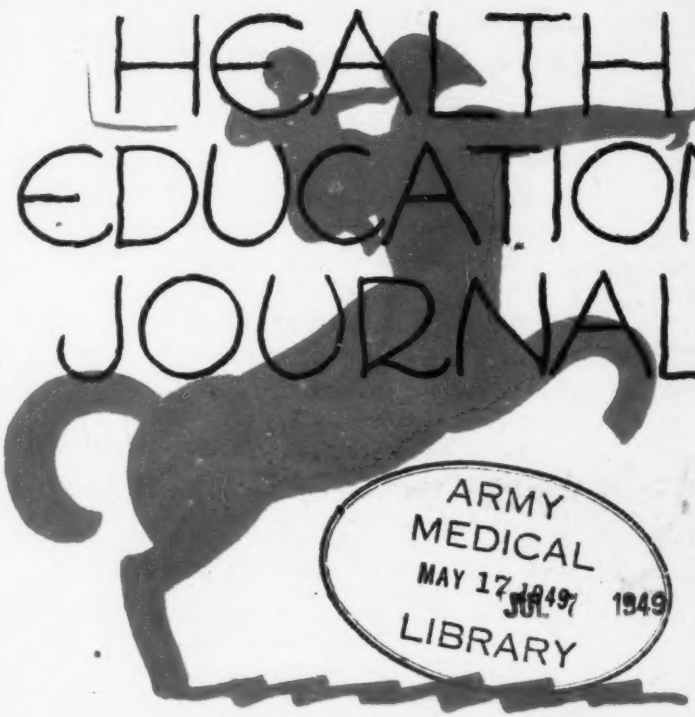

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### Health Education in Scotland

The Secretary of State for Scotland recognises the Scottish Council for Health Education as the responsible body for assisting Local Authorities in Scotland, and inquiries concerning health education in Scotland should be made to the Secretary and Treasurer, The Scottish Council for Health Education, 3, Castle Street, Edinburgh, 2.

# FOOD HYGIENE
# ONE-DAY COURSE

for

DOMESTIC SCIENCE TEACHERS : SCHOOL MEALS ORGANISERS : SUPERVISORS IN SCHOOL CANTEENS AND KITCHENS : CIVIC RESTAURANT MANAGERS AND SUPERVISORS : SENIOR MEMBERS OF HOSPITAL CATERING STAFFS

The Central Council for Health Education is providing some fifty short courses in Food Hygiene in the larger centres throughout the country during the Easter school vacation. These are intended for the above groups and will be available entirely free of charge to nominees of local authorities or regional hospital boards or their officers. Each course will consist of two lecture-demonstrations, the first dealing with the size and nature of the problem, the nature and needs of germs, the means of spread and the factors affecting multiplication ; and the second with personal and kitchen hygiene.

Particulars and a list of centres can be obtained from the

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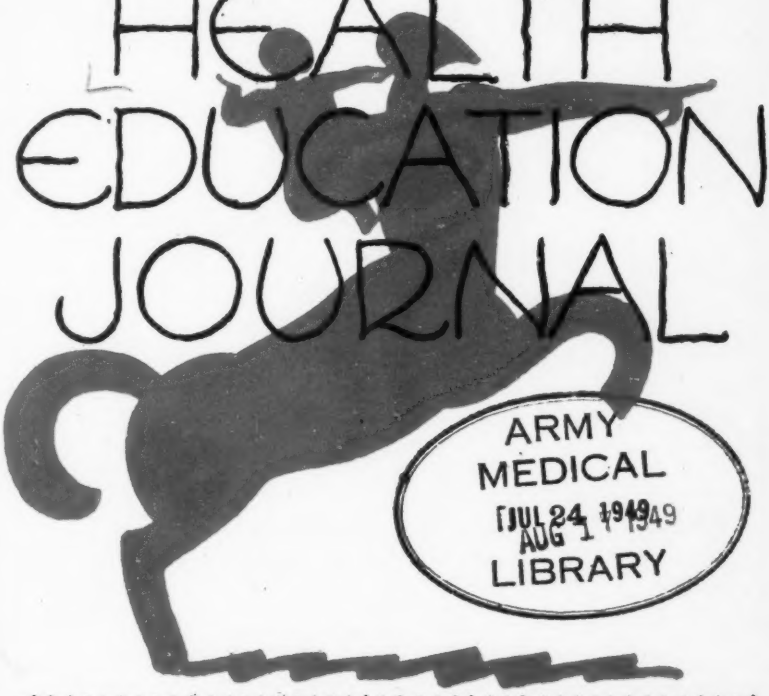

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announces

# A NATIONAL CONFERENCE

on

# HEALTH EDUCATION

at the

**Central Hall, Westminster, S.W.1**

on the

**8th and 9th November, 1949**

Abridged Programme:

*Mornings* (Great Hall)—

Lecture sessions followed by discussion.

*Afternoons and Evenings*—

Outside visits to observe health education in practice.

Film showings.

Exhibition of health education material (fully classified under subjects) and equipment.

Demonstration of exhibition techniques.

---

The above will be followed by

A Special Conference for Health Education Officers of Local Health Authorities

on the

10th and 11th November, 1949.

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Further particulars of either conference may be obtained from the Medical Adviser and Secretary, Tavistock House, Tavistock Square, W.C.1. Telephone: EUSton 3341.

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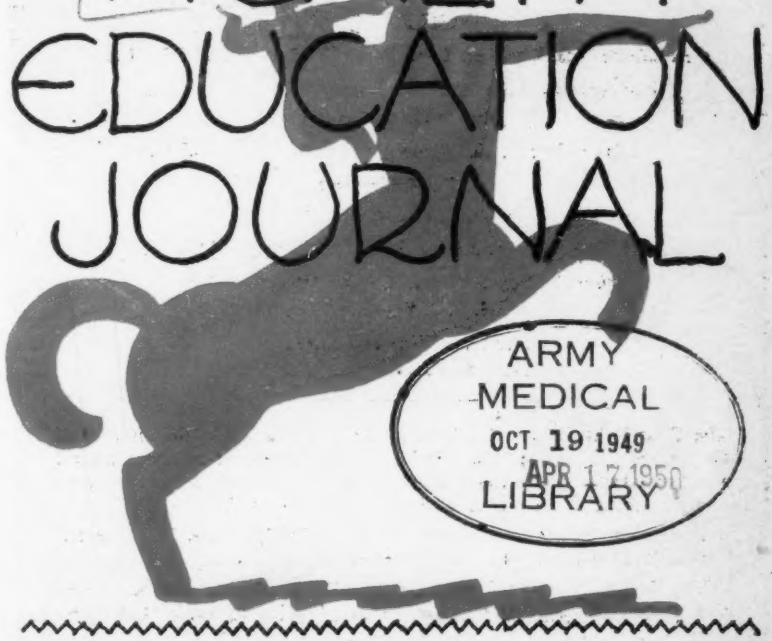

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*Medical Adviser and Secretary :*
Robert Sutherland, M.D., D.P.H.

The Central Council for Health Education is maintained by the Ministry of Health, the Ministry of Health and Local Government of Northern Ireland and Local Authorities in England and Wales and Northern Ireland to advise and assist Local Authorities in their health education work.

Its headquarters are in Tavistock House, Tavistock Square, W.C.1, and it has an Area Office with an Area Representative in Belfast.

The Central Council publishes the *Health Education Journal*, the *Nutrition Bulletin* and a wide range of health education material. Every two months it provides, free of charge to all Local Health Authorities who desire to use it, a new three-dimensional topic for the exhibition stand that it has supplied to them on free and indefinite loan. And every few months it provides, free of charge at a dozen university centres, two-day courses in health education for the members of various professional groups nominated by Local Authorities.

### Health Education in Scotland

The Secretary of State for Scotland recognises the Scottish Council for Health Education as the responsible body for assisting Local Authorities in Scotland, and inquiries concerning health education in Scotland should be made to the Secretary and Treasurer, The Scottish Council for Health Education, 3, Castle Street, Edinburgh, 2.

## THE CENTRAL COUNCIL FOR HEALTH EDUCATION

# WINTER PROGRAMME

## of Regional Courses

### 1949-1950

Short regional courses in Health Education will be held in BELFAST, BIRMINGHAM, BRISTOL, CAMBRIDGE, CARDIFF, LEEDS, LIVERPOOL, LONDON, MANCHESTER, NEWCASTLE, NOTTINGHAM and SHEFFIELD

for

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| YOUTH LEADERS | Saturday course (2.30 to 7 p.m.) in HEALTH EDUCATION FOR YOUTH from September to December, 1949. |
| MEDICAL OFFICERS | Two-day course on PRINCIPLES, METHODS AND MEDIA OF HEALTH EDUCATION from December, 1949 to February, 1950. |
| HEALTH VISITORS AND SCHOOL NURSES | Two-day course on LEARNING AND TEACHING from December, 1949 to April, 1950. |

The lectures will be given by members of the Central Council's Team of Lecturers. There will be ample time for discussion.

The programme has been arranged as a free service to Local Authorities, and no fees will therefore be charged to the nominees of Medical Officers of Health or Directors of Education.

Further information and particulars of dates may be obtained from Dr. Robert Sutherland, Medical Adviser and Secretary, The Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

# HEALTH EDUCATION JOURNAL

This quarterly Journal aims at helping the individual and the nation to a higher level of physical and mental health.

In its pages experts give interesting information about health and discuss the problems facing us and the best ways of giving people of all ages the health knowledge they need.

The Journal is meant to be stimulating and thought provoking and not merely a mirror of the official views of the Central Council for Health Education. Contributors are therefore encouraged to express their own opinions however controversial these may be.

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### ARTICLES

Readers are invited to submit articles on Health or Health Education. They should be not more than 2,000 words long. Contributions should be addressed to the Editor.

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